# e Itliming Junual, COMMERCIAL GAZETTE:

FORMING A COMPLETE RECORD OF THE PROCEEDINGS OF ALL PUBLIC COMPANIES.

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No. 2026.—Vol. XLIV.

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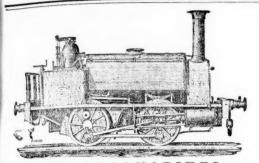
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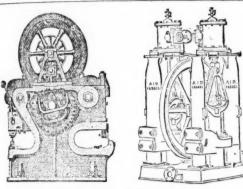
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Obtained the PRIZE MEDALS at the "ROYAL EXHIBITION" of 1851; at the "INTERNATIONAL EXHIBITION" of 1882, in London: at the "IMPERIAL EXPOSITION," held in Paris, in 1855; at the "INTERNATIONAL EXHIBITION," in Paris, it is seen the "UNTERNATIONAL EXHIBITION," in Paris, 1867; at the "CREAT INDUSTRIAL EXHIBITION," at Altona, in 1869; and at the "UNIVERSAL EXHIBITION," Vienna, in 1873.



22½ pm. 22½ pm. 1½ pm. 5 pm. 10 dis.

DICKFORD, SMITH, AND CO., of TUCKINGMILL, CORNWALL: ADELPHI BAYK CHAMBERS, SOUTH JOHN STREET, LIVER-POOL; and 85, GRACECHURCH-STREET, LONDON, E.C., MANUFACTURERS AND ORIGINAL PATENTEES of SAFETY-FUSE, having been informed that the cover of their Grups have been stacked to formed that the name of their firm has been attached to fuse not of their manufacture, beg to call the attention of the trade and public to the following announcement:—

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EVERY COIL of FUSE MANUFACTURED by them has TWO SEPARATE

THREADS PASSING THROUGH the COLUMN of GUNPOWDER, and BICKFORD, SMITH, AND CO. CLAIM TWO SUCH SEPARATE THREADS as

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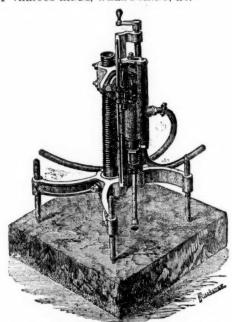


#### MACHINES

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IN USE AT THE ST. JOHN DEL REY MINES, RIO TINTO MINES, TRIESTE HARBOUR WORKS, ALEXANDRIA HARBOUR WORKS, AND IN VARIOUS TUNNELS, MINING AND QUARRY WORKS, DEEPENING RIVER BEDS, STONE-CUTTING AND CONTRACTORS' WORK OF VARIOUS KINDS, WELL-BORING, &c.



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It is the most powerful, and runs at greater speed than any other, without liability to derangement or breakage.

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COPY OF LETTER FROM SIR GEORGE W. DENYS, BART. Drayest Hold, Richmond, Forkshire, May 11, 1874.
Dead Sirs, Messrs. Jeffryand Nevin, of the Lean Kills Mining Company, came here from Scotland last week to see the borer at work in Sir Francis level. They went back highly pleased with what they saw. The level, which is just now going at £7 per fathom, they stated could not be moved at Lead Hills for less than £15. Five holes, between 6 ft. and 7 ft. deep, had been bored during the shift, and were fired together with 50 charges of dynamite, getting, as you may suppose, a tremendous quantity of stuff, and filling the level right up to the roof.

The old machine has been working first rate since you repaired it, and seems as good as ever. I think you will be hearing from Lead Hills before long, for seeing is believing. You can make any use of this you like.

Messrs. McKean and Co.

Yours truly, GEO. W. DENYS.

### CONDENSATION OF SMOKE & GASES

HESLOP, WILSON, AND BUDDEN,

NEWCASTLE-UPON-TYNE. This PATENT APPARATUS is EXCEEDINGLY SIMPLE and INEXPEN-SIVE IN CONSTRUCTION, and is so arranged as may seem best for assisting

the substances to be operated upon.

AFFORDS TO MANUFACTURERS AND OTHERS PERFECT SAFETY

UNDER THE SMOKE AND GASES ACTS. More effective than condensing towers.

Large chimneys can be done away with. Succeeds thoroughly in condensin

UTILISES ALL EMISSIONS.

OF GREAT VALUE IN SMELTING WORKS.

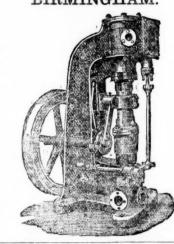
JOHNSON AND HOBBS,

No. 11, CROSS STREET, MANCHESTER, Of whom also all particulars can be had.

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BIRMINGHAM ENGINE WORKS,

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Sizes, from cylinder. 10 to

### SOLID DRAWN BRASS BOILER TUBES.

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ACCORDING TO THE NEW MINES REGULATION ACT. BEST KNOWN MATERIAL.

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By a special method of preparation, this leather is made solid, perfectly close in texture, and impermeable to water; it has, therefore, all the qualifications essential for pump buckets, and is the most durable material of which they can be made it way be had of all dealers in leather, and of—

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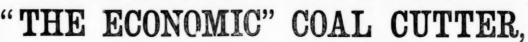
Prize Medals, 1851, 1855, 1862, for MILL BANDS, HOSE, AND LEATHER FOR MACHINERY PURPOSES.

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WARRINGTON. T.

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ANDRE'S PATENT HYDRAULIC MINING PUMP,

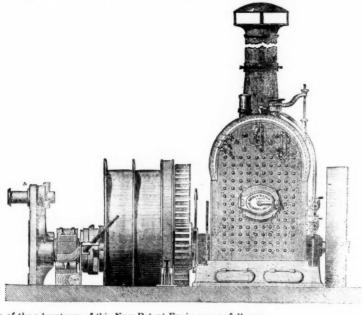
COMPRESSORS.

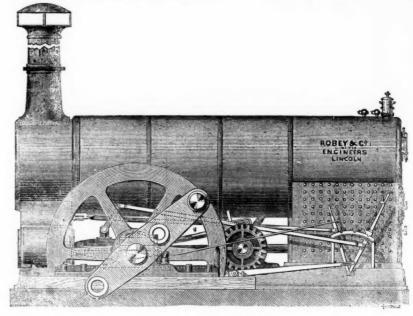
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# IMPROVED ROBEY MINING ENGINE





Some of the advantages of this New Patent Engine are as follows:-

SMALL FIRST COST.

SAVING OF TIME AND EXPENSE IN ERECTING. EASE, SAFETY, AND ECONOMY IN WORKING. GREAT SAVING IN FUEL.

This New Patent Mining Engine is free from all the objections that can be urged against using the Semi-Portable Engine for permanent work, because it possesses the rigidity and durability of the Horizontal Engine, and at the same time retains the advantages of the Semi-Portable, in saving time and expense in fixing.

ENGINES UP TO 200 EFFECTIVE HORSE-POWER ALWAYS IN PROGRESS.

Prices and full particulars on application to the sole manufacturers:

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This is the best hand-worked implement for colliery purposes extant. It can be carried about, set up, taken down, and worked by one man. It bores vertically upward as well as in any other direction. The rate of work is at least four times as great as by the usual methods. The hole made four times as great as by the usual methods. The note made is straight and uniform, and, therefore, specially adapted for the use of cartridges.

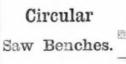
Price list and description, with list of places where the Perforators are in use, on application as above.

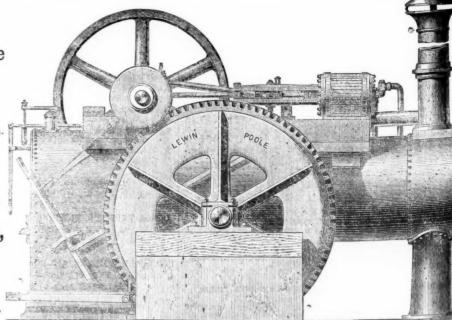
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WINDING AND PUMPING GEAR.

LEWIN, POOLE, DORSET

#### Original Correspondence.

A CASE FOR THE CERTIFICATED COLLIERY MANAGERS ASSOCIATION.

ASSOCIATION.

SIB.—In last week's Journal you report a case of neglecting to report an accident which Mr. Wynne, her Majesty's Inspector of report an accident which Mr. Wynne, her Majesty's Inspector of Mr. Wynne sustained his case, and Mr. Greenwood inflicted a Mr. Wynne sustained his case, and Mr. Greenwood inflicted a penalty of 5t. and costs, and along with this decision he laid down penalty of 5t. and costs, and along with this decision he laid down the law. He is reported to have said—"It must be clearly understood that notice must be given of every accident." This Mr. Greenwood, I presume, is a Justice of the Peace; evidently he is not the "Coal Mines Regulation Act, 1872," as there is a difference between him and the Act. The Act says—p. 1, A 39: a difference between him and the Act. The Act says—p. 1, A 39: a difference between him and the Act. The Act says—p. 1, A 39: a difference of the Where in or about any mine to which this Act applies, whether above or below ground, either—(1) Loss of life or any personal injury to any person employed in or about the mine occurs by reason of fife or any serious personal injury to any person employed in or of life or any serious personal injury to any person employed in or about the mine occurs by reason of any accident whatever—the owner, agent, or manager of the mine shall," &c., &c.

In cases of explosions by gas, powder, or boiler the law as laid low by Mr. Greenwood is right, but in other classes of accidents has a trainance with the clear wording of the Act he sits to administer. This is a point the managers of coal mines should take up at once, otherwise it will become necessary to station a doctor at the pit top to ascertain if any boy has fallen and hurt his nose, or scratched his finger with a pin.

CLEE HILL COLLIERY COMPANY.

or scratche
June 18.

CLEE HILL COLLIERY COMPANY.

Sm.—Your readers must feel greatly obliged to the author of \*Mining Sketches" for the graphic description of the above property, which appeared in last week's Journal. His observations bear to me the impress of truth, and appear unanswerable. They cannot, however, be very palatable to us poor shareholders who have bought at a promium, but they apparently prove the statements made in the prospectus to have been utterly fallacious, as can be seen from the following extracts:—

These properties have been surveyed, first, but You was a surveyed. The statements have been surveyed, first, but You was a surveyed.

and the statements made in the prospectus to have been utterly fallacious, as can be seen from the prospectus to have been utterly fallacious, as can be seen from the following extracts:—

These properties have been surveyed, first by Mr. Joshua Richardson, M.Inst. C.E., jakment agent to the Earl of Craven, and also by Mr. John Brunton, C.E., jakment agent to the Earl of Craven, and also by Mr. John Brunton, M.Inst. C.E., F.G.S., F.R.G.S., &c., which latter gentleman was accompanied by Mr. Bin the company, and who did his utmost to sift the correctness of every of starement put forward. The reports of these gentlemen accompany the prospectation of the single properties and the single prospectation of the single prospecta

economical working, the cost of production of the coal has been 20s. per ton, and the selling price on the bank only 16s., and about 8s. for slack. If, therefore, the late owners, who, by allowing "the management to take it chance," could obtain dividends of from 12½ to 15 on the purchase money "before the rise in prices took place," what term ought to beapplied to the recent "thoroughly efficient management," who, under more favourable circumstances have only been who, under more favourable circumstances, have only been

able to realise a heavy loss? A great feature is made of the appointment of Capt. J. Kitto, of the Foxdale Mines, as the successor of the previous incompetent managers; and, like Cheap Jack's wares, the last is always the best. May it prore so in this case; but is a long experience in lead mines any special recommendation to the office of a colliery manager? Besides, I see that Capt. John Kitto's name appears in the prospectus upon the board of direction. How is it, therefore, that his great experience has not sooner corrected this extravagance and mismanagement, which for I8 months have characterised the proceedings of this company? Doubtless the shareholders will be glad to receive any explanation that can be offered.—London, June 17. OBSERVER. A great feature is made of the appointment of Capt. J. Kitto, of

#### THE EMMA MINE-AMERICAN PATENTS.

THE EMMA MINE—AMERICAN PATENTS.

Srs,—I was very much struck on reading a remark made by Mr. George Attwood in his reply to "H. N.," in the Supplement to last week's Journal, respecting the Emma Mine. In speaking of the "ore deposit," as contradistinguished from a true vein, he said,—"Its course sa almost at right angles to the patented ground." From that remark it would appear that Mr. Attwood is of opinion that if a lode or deposit dips outside of the perpendicular lines of the patented parallelogram that it ceases to be included in the patent. It such were the case—which, as I understand the law, it is not—a United States patent title to a mine would oppose itself to the terms of the original claim, which secures to the owners the right to follow of the original claim, which secures to the owners the right to follow the fisure, whether in vein or cavity form, in whatever direction it may go, to the linear extent included in such original claim, having been first duly recovered. And hence, instead of strengthening baying ben first duly recorded. And hence, instead of strengthening and perfecting the title, it would expose it to additional dangers. If then, the ore in the Emma Mine extended transversely to the patents ground from its initial point to the full linear extent specified in the original claim, that title would be good according to that led in the original claim, the title would be good according to that seed in the original claim, the title would be good according to that seed, and would be respected as taking precedence of all others also make an in whether comprised within stateding beyond the same vein, whether comprised within a marked off at the surface, as such limitations in no way affect or bridge the right and title to follow and work the lodes in whatest direction they may go, to the full longitudinal extent "specified," "claimed," and "ratified" in the district Recorder's book. But, on the other hand, if the vein, fissure, or cavity terminated in and another rein or denoit which wich the control of the surface o and another vein or deposit which might occur in the vicinity, and which from the general aspect might be supposed to be related to be read aspect might be supposed to be related to came and with it, it would be extremely difficult to establish or even identical with it, it would be extremely difficult to establish a claim and dispossess another occupier under such circumstances, on mless extraneous influences were brought largely to bear in the it toutes, for this reason, that ocular proofs might be wanting; but it fitsy were not entirely absent, what there was might be used with late effect against the abettor of the identical theory. If a United States patent or franchise restricted individual mines to the retrical area of their surface dimensions, as outlined and specified in the diagram upon which their transfer proceeds—for, to all then the diagram upon which their transfer proceeds—for, to all to its individual citizens—such a restriction would practically infore additional liability to loss without securing in any way any conceivable advantage, inasmuch as the original squatter's title is

equally good, and infinitely less cumbersome and expensive in pro-curing, than the United States patent. That the earliest location will hold a mine against all invaders, notwithstanding that the direction of a lode may be misstated, and found eventually to be longitudinally opposite to the direction it was said to be, in the notice furnished to the recorder of the district by the original locators, and by him duly entered in the mining records, has been proved in the Nevada law courts by the contest, a few years since, between the Eberhardt, Blue Bell, Keystone, &c., at White Pine; such a mishap being rendered inconsequential by the embodiment of explicit and formidable specific provisions for following the lodes respectively, what was direction they may go in. My only object, in respectively, whatever direction they may go in. My only object in troubling you with these remarks is to prevent, if possible, any misapprehension of the subject.

ROBT. KNAPP.

Llanrwst, June 17.

#### MINING IN UTAH-EMMA, FLAGSTAFF, &c.

SIR,—The Emma takes out daily 10 tons of high-grade ore; it would certainly be more if they had less water to contend with. There are large amounts of ore in the different levels, and also on the dump, which is second class, and amounts altogether to about 4000 tons. Three concentrators will start in a few days.

The Flagstaff has a body of ore, 20 feet thick, in the 180 ft. level. t the 700 ft. level they have also a large body of ore. The roads in Little Cottonwood are improving daily, and as soon as they are

all right there will be a lively shipment.

The Chicago is doing very well.

The Mono Hoisting Works are complete, and they will start with full force. The entire profit of the Mono for the last two years \$400,000, and from Jan. 1, 1874, until May 1, 1874, it is \$130,000. Bingham Canyon has the greatest quantity, and Ophir the bequality, of ore in Utah.

WM. BREDEMEYER, M.E.

quality, of ore in Utah. Salt Lake, May 27.

#### THE EMMA MINE-OFFICIAL INCONGRUITIES REQUIRING EXPLANATION.

EXPLANATION.

SIR,—Last evening I received the printed notice, sent to all shareholders, that the third ordinary general meeting of the Emma Silver Mining Company (Limited) would be held on the 15th inst. The notice was accompanied by a number of reports, one from the Chairman of the board of directors, one from the Chairman of the board of directors, one from the committee, and one from Mr. Attwood; with the latter were five maps, or plans, consisting of, first, a geological diary showing anticlinal fold, &c.; second, transverse and horizontal sections; showing shape and size of ordeposit, &c.: third, a ground plan, showing position of Emma ore deposit in reference to porphyritic dyke found in the Reliance tunnel; fourth, a vertical plan; and, fifth, a map showing the water rights claimed by the Emma Company, and flumes built, &c. All the report are most discouraging. Mr. E. S. Blackwell, in a report of June 7, 1873, says:—"The future of the mine depends entirely upon the virgin ground, and to explore this you must be prepared to wait some time and spend a large amount of money in developments." Mr. Clarence King, on June 11, 1873, says:—"The great Emma bonanza is, with insignificant exceptions, worked out." And Mr. Andrew Murray, F.L.S., &c., says, Aug. 5, 1873:—"In my opinion the famous Emma Mine is exhausted." If the mine was exhausted last August, how can we account for the paragraph under the head of finance in Mr. Attwood; report:—"The net return resulting from the working of your mine from March, 1873, to March, 1874, may be considered to be at least \$131,000, after paying all expenses, also numerous old debts, one of the principal of the latter being a county tax biil of \$10,000." Now, Messrs. Editors, we are assured by three prominent experts that the Emma Mine was exhausted last June and August: assuming that the mine yield was equal each month, over half the net returns (\$131,000) must have been extracted since the mine was reported exhausted! How doy on explain this, and what was the gross yield of interesting matter therein. Salt Lake City, May 26.

"AN EXHAUSTED MINE,"—In another part of these columns will be found a letter on the recent reports of the directors, committee, and manager of the Emma Mine, written by a shareholder who is evidently anything but a blind believer in the official statements published concerning the mine. These reports furnish somewhat curious reading, and induce reflections far from complimentary to the honesty of the officers and lirectors. They assure the shareholders that the mine is exhausted, but it is proposed to continue work; and strange to say Trenor W. Park is declared willing to wait payment of his claim until after the close of this year, and until this mine is in a better condition. Shrewd, keen, and far-seeing as Mr. Park is known to be, and thoroughly acquainted with the Emma, these gentlemen ask the public to believe that he is willing to postpone the collection of an amount due him until an "exhausted," mine is in a better condition. Mr. Attwood, in endorsing the statements of so called experts made as long ago as last August, that the mine was exhausted, tells how he has paid during the year a large amount of indebtedness, including a county tax rate of \$10,000; some of this indebtedness being unknown and unexpected; and yet he has had a profit of about \$130,000; in other words, in four or five months—up till August, when the mine was exhausted—he was able to pay all heavy indebtedness and secure for the company a profit of over \$130,000; for it is not reasonable to think that an exhausted mine could do more than pay expenses, if it could do that. And it made this profit despite the fact that Mr. Attwood must have been exceedingly generous, not to aylavish, in disbursing the company's funds. We find by his own report that over \$1,000, sterling were paid for hauling some 5000 tons odd of ore from the mine to the railroad. This would be at least \$12 a ton for hauling, and considering all things we should think the teamsters ought to feel particularly grateful to Mr. M. for his liberalty. The Flagstaff and the Dav

#### KALOSIC GAS-No. VII.

APPLIED TO IRON SMELTING.

One of the most important applications of kalosic gas to useful purposes is that to the smelting of iron, and by a very natural expansion to metallurgical processes generally. According to authorised returns, about 6,000,000 tons of pig-iron are smelted annually in the United Kingdom by the consumption of 12,000,000 tons of coal, or 2 tons of coal to every ton of pig-iron. Whatever the make, whatever the size, of a smelting furnace, whether 50 ft. or 100 ft. high, matters not. Its functions are many, and its moving powers are steam and brute force. The endless wagon is followed by the endless tip, and at certain intervals the white-hot spouting metal is allowed to rush from the tap-hole, and find its level in the trenched sand. Few or none stop to consider that this smelting-furnace is not a smelting-furnace merely. It is a lime-kiln, it is a gas factory, it is a distillatory and a huge glasshouse; and it is, moreover, a persistent producer on a large scale of remarkable chemical products besides iron. ides iron.

Those issuing from the throat of the furnace have latterly been applied to useful purposes, and many efforts have been made, and are now making, to utilise the slag that streams from below. But are now making, to utilise the slag that streams from below. But what great improvement has lately been introduced into the body of the furnace—into the general system of reducing the ore? Since the introduction of the hot-blast, with all its regenerative additions, literally nothing. I do not speak of after operations, but of what takes place in the smelting furnace itself. There, and around, it is all high-pressure and unflagging competition—one blind and ceaseless struggle for gold. People have no time to think, except of how many hundred tons of pig-iron they can produce in the week, and whether its quality is up to the proper standard; and if Philosophy but show herself at the gates with any suggestion of improvement or economy herself at the gates with any suggestion of improvement or economy she is pretty sure to be refused admittance. Yet who can doubt, upon a moment's reflection, that under this higgledy-piggledy, semibarbarous system of reducing the metal from its ore, there must be an enormous waste of fuel constantly going forward, and not only that, but an enormous waste of time. Yes, time! Here is an appeal at once to the pounds, shillings, and pence side of the question-appeal that will be listened to.

To prove this in a general way. If there is no coal in the furnacto ignite and distil, not only is one unnecessary complication thereby avoided, but a great cooling effect is got rid of also, the magnitude of which will be better understood by an illustration. In a smelting works, producing (say) 800 tons of pig-iron per week, no less than 1600 tons of coal, at ordinary temperature, are required to be heated to a white-heat; and, moreover, as a necessary consequence, to be distilled; both which operations absorb an immense quantity of useful and otherwise available heat. But this is not all.

of useful and otherwise available heat. But this is not all.

The gaseous hydrocarbons so evolved are themselves decomposed with a still further abstraction of heat from the furnace. This decomposition has been abundantly proved by Bunsen, Playfair, and many other experimenters. At Alfreton, in Derbyshire, for instance, the proportion of hydrocarbons to hydrogen in the escaping gases was very small, and in other cases proofs are not wanting of their

total absence. The evil arising from these causes is directly proved by the fact that where the process of coking and distillation does not take place, as where charcoal is used, the body of the furnace does not require to be so high as in the case of a furnace where coal is the final employed. is the fuel employed.

But the most wasteful and destructive fallacy connected with the use of raw coal, or indeed of any solid fuel, in the process of iron smelting is this, that the ceaseless volumes of carbonic acid, formed by the action of the blast upon the white-hot coke in the crucible by the action of the blast upon the white-not coke in the clueble of the furnace, are no sooner generated than they are again converted into carbonic oxide, and thus doubled in volume; a change which is accompanied by an immense absorption of sensible heat, which rapidly reduces the temperature of the furnace above the crucible, and by cooling down the operatist affinities impedes and slackens the process of reduction. From all these circumstances, and from the escape of unburned combustible gases, principally carbonic oxide, the escape of unburned combustible gases, principally carbonic oxide, Bunsen and Playfair, from their elaborate experiments at Alfreton, already referred to, estimated that somewhat more than four-fifths of the total quantity of heat produced from the fuel was wasted. I am truly disposed to think that four-fifths of the time now consumed in the operation of smelting is being wasted also. Taking a very moderate estimate in this respect, however, I am satisfied that by the direct use of kalosic gas in smelting, three-fifths of the fuel will be saved; and, furthermore, that every furnace may be tapped four times in every 24 hours, instead of twice, as at present. This result in effect reduces the cost of iron smelting to less than half the price it is at present; and, at the same time, it doubles the productive power of all the furnaces of the United Kingdom, and therefore of all the world beside, where coal is employed as the reducing agent.

It has been stated that under the present system of smelting 2 tons of coal are consumed for every ton of cast-iron produced. Now, as I only require under my patent two-fifths the weight of coal or coke which are now needed for this purpose, I shall only require about 16 cwts, of coke (sav) to the ton of iron. And, as a ton of coke produces 220,000 cubic feet of kalosic gas—there or thereabouts—so 16 cwts. will give 171,000 cubic feet. Let us suppose that the iron run off at a single operation is equal to 15 tons. Then the quantity of coke required for its reduction would be 12 tons—equal to 2,640,000 cubic feet of gas—a quantity easily produced in 12 hours—6 hours—or even much less, with my most simple generative apparatus, whose action is constantly maintainable at almost any velocity of production, and which is throughout totally independent of retorts and nicely adjusted mechanism. The only qualification that might be found necessary would be a very small amount of solid fuel in the furnace to aid in the support of the charge. Now, when we think what a powerful torrent of intense flame may thus in an instant be poured though the largest furnace, the charce of its ever setting must be It has been stated that under the present system of smelting 2 tons though the largest furnace, the chance of its ever setting must be very remote. The matter is so completely under command in every respect when gas is used as the fuel, that there will now be no diffi-

respect when gas is used as the fuel, that there will now be no diffi-culty in making Sunday a day of rest both for miners and smelters. Such a command of heat also, as before said, cannot fail by exalt-ing the affinities to quicken and to expedite the process immensely. There is nothing absolutely necessary to the operation in these long hours of smelting. Circumstances alter all things. In place of the 12 hours we have been considering, in Cleveland the time of descent is about 36 hours, and in the older blackband furnaces of Scotland it is from two and a half to three and a half days; while, on the other hand, in some of the continental furnaces, as toose of Styria, where the ores are chiefly spathic and the fuel is charcoal, the smeltwhere the ores are chiefly spathic and the fuel is charcoal, the smelting speed is express, and the tapping takes place at intervals of every two to two and a half hours. I merely wish to point to the fact, and to show that by the removal of the drawbacks above referred to, and with the aid of such a powerful agent as kalosic gas, the process of iron smelting may be wonderfully expedited and economised; to such an extent, indeed, that four furnaces may be made to do the work of eight, and at a saving of more than a clear half

The latest improvements in kalosic gas, however, carry us further than this, for this powerful gas may now be made in any quantity from common slack at a total expenditure of only 1d. per 1000 cubic feet, including material, labour, and every other charge. The further application of this important gas to puddling and forging, as well as to general fusions and metallurgical heat processes of every character. It have to expend in future communications. racter, I hope to expound in future communications.

ISHAM BAGGS.

#### "THE SCIENCE OF INNESTMENTS."

Sm.—At this time money is abundant, and the surplus wealth of the civilised world flows into our coffers. Australia, New Zealand, and our colonies open out their riches, extend our commerce, absorb and our colonies open out their riches, extend our commerce, absorb our surplus population, and send their gold and productions to the Mother Country, adding volumn to our manufacture, and taking in exchange our machinery, fabrics, and the products of skill, industry, and enterprise. Why, therefore, should the artizan, the miner, and the agriculturist have cause to strike, and thus paralyse the trade of the commonwealth, and snap asunder the mainspring of confidence, which alone constitutes the basis of prosperity and progress? The promise of an abundant harvest is well secured, the spring has been most favourable, and the season has happily advanced with every chance of warm and congenial weather, to ripen the crops. every chance of warm and congenial weather, to ripen the crops, and yield us a bounteous supply of corn and the sustenance of man and animal life; still the agriculturist is dissatisfied, and the leaven of discontent is far spread, and extending; while grave are the seeds that threaten to disturb the labour market, and shorten the supply, when the sickle should be active and the husbandman at work. Yet, in the face of all these dangers the Legislature of the country is in the face of all these dangers, the Legislature of the country is silent as to the future, and no remedy appears in possession or in prospect to contend against the breakers discernable ahead. Should silent as to the future, and no remedy appears in possession or in prospect to contend against the breakers discernable ahead. Should the agriculturists turn out, and the crops be threatened with destruction whence, let us ask, can come the hands to reap the corn and gather in the harvest which a bountiful Providence is to all appearances about to bless us with? In reply, we state that the Government must lend us the volunteers and militia, and thus supply the deficiency of rural and agrarian labour. The necessity, "as the volatile French legislator would assert," is urgent, and Parliament ought at once to stifle the growing suspense, and announce its determination to come to the rescue. Strikes are all well enough when confined to mining, manufacture, and construction, but in respect to the indispensable productions of nature, essential to the very existence of mining, manufacture, and construction, but in respect to the indispensable productions of nature, essential to the very existence of animal life, legislation is demanded whenever combinations are formed, aggravated, and fevered through prurient democrats and incipient anarchy. Thus the present is an occasion wherein a Conservative Government can assert its power, and come to the deliverance of the people, while possibly the urgency of the question may lead to legislation on the all-absorbing and momentous relations of labour and capital, for each has its duties and its rights, and both should be amalgamated, though they now stand, unhappily, at variance, and in cases practically divorced. t variance, and in cases practically divorce

In the face of these dissentions can we wonder that capital finds its way abroad, and that now we have far more than twice our national indebtedness invested in foreign countries? For instance, Egypt owes us above 60,000,000L, Turkey 120,000L, Italy about 40,000,000L,Peru 12,000,000L,Portugal 64,000,000L,Spain 237,000,000L, Russia 130,000,000L, United States 300,000,000L, France 250,000,000L, whilst Turkey and almost severy other country, are still horrowers. whist Turkey, and almost every other country, are still borrowers, and offer capitalists tempting and remunerative interest for their money. And what are the consequences of these vast receptacles and still extending channels for the absorption of England's wealth? Why, diminished enterprise at home, and the construction of rail-roads, canals, docks, vessels of war and shipping, with competitive manufacture and commerce against us, while we possess mines of wealth at home and in our colonies that languish for that support which we are driven to extend to the foreigner.

which we are driven to extend to the foreigner. With the above reference to foreign loans, and the sinking of

even in such prizes as the Devon Consols, Minera, So th Caradon, Van Tincroft, Dolcoath, or any other mine; while all should remember that each and all of these undertakings were once in their infancy, and that each and all of these undertakings were once in their infancy, and presented no greater chances of success than many a struggling progressive and partially open mine does at this moment; thus, we may observe that it is from the latter that frequently spring those great and startling "creations" of wealth that fascinate the public, while they add greatly to the increase of labour, merchandise, manufacture, trade, and commerce; but not so with horse racing, for Lord Tomnoddy, of St. James's, knows nothing of opportunities or the "Science of Investments." He will give or take "odds" on the favourite for the "Derby," which may or may not turn out a grand opportunity for making money or for losing it, but the chances are at least even if not dead against the indolent recipient of an ancestral rent roll. A stable boy at Tattersall's has the "odds" much more in his favour than Lord St. James; and as the balance of betting on a race must be precisely poised, inasmuch as one wins precisely what another loses, while at the same time the habit of betting is costly apart from the risk, it must be very clear habit of betting is costly apart from the risk, it must be very clear that the Corinthian class lose on balance. The excitement may be very enticing, and the squandering of money easily earned may be the babit of English gentlemen who have nothing else to do, but it would be much better for us all if those gentlemen born with golden groups in their near the great learned to the control of the would be much better for us all if those gentiemen born with goiden spoons in their mouths would turn to something useful, and make that their s ady instead of "odds" on horses. There are plenty of opportunities in investing with gains which racing will not give; and if some risk is necessary to spice the occupation, that is amply furnished in the ordinary channels of commerce, but with this essential difference—that investment need not be gambling. Some men of fortune devote all their time and energies to a betting-book, thoselvy showing that their pative intellect requires some vent in thereby showing that their native intellect requires some vent in form of buying and s-lling; and if this is one of the conditions of human existence, why should not the propensity be directed to some useful channel? A telegraph or a railway share, a mine share, or that of one in a bank, shipping dock, canal, insurance, gas, or water company, must do good to somebody, but a "Derby" never did any good to anyone in proportion to its ovid. Some boys done did any good to anyone in proportion to its evils. Some have done good by a "Derby," but the majority have lost; while by the Great Western, Northern, London and North-Western, and other railways, various telegraphs, the Fore-street Warehouse, and numerous com-mercial and trading companies, the London and Westminster, Joint Stock, London and County, Union, National Provincial of England, and a host of banks, with the general mining interests of the country in the production of coal, iron, copper, tin, and lead, which have raised their products second only to agriculture, all the nation has been benefited, while the large majority associated therewith have won. This is not the case with horse racing, for it is purely gambling. The year 1868 was stamped in the most emphatic manner as one

wherein capital for a long time lay dormant against the resuscita-tion of enterprise. The crippling complications, bankruptcies, and disasters that culminated in 1866 were then keenly alive throughout the length and breadth of the kingdom, yet, weary of the low prevailing rate of discount (2 per cent.), they yielded to the solicita-tions and force of high interest paid on foreign loans, chiefly Rustions and force of high interest paid on foreign Ioans, chieny Russian railway schemes of great magnitude, and which amounted from August the previous year, to the end of November, 1868, to no less a sum than 90,000,000,4, and on the 17th of that month the shipment of 1,000,000, in gold to Russia raised the rate from 2 to 2½ per cent. at the Bank of England, it having stood at the former nominal figure for no less than 69 weeks. On Dec. 3 it advanced to 3 per cent, and during the following year we had frequent changes and higher rates. These pass almost entirely from the introduction and adors rates. These arose almost entirely from the introduction and adoption of foreign loans. As home enterprises were long after all but neglected, the trade of the country being greatly depressed exceptnegicted, the trade of the country being greatly depressed exceptin respect to iron rails and the extraordinary rise in tin. The harvest, also, was an unusually good one. At the present moment, like the year 1868, we have abundance of money, and the rate is likely to sink low—probably as low as 2 per cent—and we are threatened with a host of new loans. In respect to Turkey alone, no less than 75,000,000/. 3 per cents., while America, France, Spain, Egypt, Russia, and almost every other State and country, will attempt to draw our money away. So long as the strikes continue high prices of coals and materials will be maintained; so long will home speculative undertakings be unsettled and our industrial interests culative undertakings be unsettled and our industrial interests the track the trackings be unsetted and our industrial interests suffer. The infallible and disastrous results will fall on and be sustained by the masses—so long as strikes continue so long will the social well-being of the working community retrograde. Nothing nourishing or even refreshing ever sprung out of chaos.

R. TREDINNICK, ineer, and Dealer in Stocks and Shares 32, Feet-street, E.C., June 15.

#### SLATE QUARRIES AS AN INVESTMENT.

SIR,—I was pleased to find an article, under the above heading, in the Journal for June 6, by Mr. Edward Betteley, calling attention to the quarries in the Festiniog district. All who have visited that district in the character of observers cannot fail to come to the that district in the character of observers cannot fail to come to the same conclusion as Mr. Betteley. Were the same gentleman to pay a visit to the Bethesda district, in the neighbourhood of the celebrated Penrhyn Slate Quarry, near Bangor, he would be astonished at the pregnant riches of the place, which, for many miles, is literally bestudded, even on the surface, with slate rocks of the best known quality. One quarry has of late been opened opposite the Penrhyn Slate Quarry, by a gentleman from the neighbourhood, to prove the vein, and though it has been worked only a little over two years, it has been amply ascertained that its resources are of such immense has been amply ascertained that its resources are of such immense magnitude as to be simply exhaustless. It is really quite surprising how British capitalists are attracted abroad to embark in doubtful speculations, leaving unheeded such immense wealth, so very account of the speculations and the speculations are speculations. sible at home, to slumber through all the ages in perfect oblivion.

And, after all, it is a patent fact that orders for slates have often to
lay unexecuted for years.

E. W. JONES. lay unexecuted for years.

Ogwen-terrace, Bethesda, June 15.

#### CALLINGTON AS A MINING DISTRICT.

CALLINGTON AS A MINING DISTRICT.

Sir,—The strataare in the killas formation, near the granite. There are 15 parallel tin and copper lodes within 1½ mile of the town. There are several cross-courses also, some of them producing good quantities of silver-lead ore. Within the last 25 years there have been 15 steam-engines pumping from as many shafts; now there is but one engine left working, and not much doing there. The shafts are not sunk far in many of the so-called mines, the deepest—Hitchins' shaft, at Holmbush—is 147 fms, under adit, and the least is only sunk 10 fms, under adit. Most of the lodes are well defined, and have a very kindly appearance, but in many instances they have never been proved; even the deepest is not more than one-half the depth of a great number of our Cornish mines. The neighbourhood has been condemned for years past as a poor district, but the lodes have never been proved to see what they really are worth. Old Wheal Brothers is a proof that things were not formerly looked after as they should have been, as it is now paying very well, by working over the old burrows only. Now Dr. Emmens has commanded the excellent the state of the second of the second after as they should have been, as it is now paying very well, by working over the old burrows only. Now Dr. Emmens has commenced thoroughly to work Holmbush, Redmoor, and Kelly Bray as united mines, we wish him success. I believe there are other abandoned mines in the district quite as good speculations, with shafts sunk in firm ground, and good strong lodes laid open; the money already spent, although lost to the last parties, would be a great advantage to whoever may re-work the properties. This district has always been condemned as a mining district but there is the strict has always been condemned as a mining district but there is trict has always been condemned as a mining district, but there is not one of the setts that has been proved yet to any great extent. The money has been expended at and near the surface. I should very much like to see some parties take up these abandoned mines and show the public what can be done with a small capital. At one of these abandoned mines 16 of us, working there on tribute, offered to work the mine at 15s. in 1l., after the order came to stop working. We to prov selling at 35/, per ton. We to provide coal and every other expense—tin then 5l. per ton. The engine-shaft is 50 fms. deep only, sunk in blue clay-slate, and will stand good any length of time. Another shaft is sunk 40 fms. on a silver lode; the same lode where Capt. Doble is making such returns from the burrows only in the adjoining sett.

There is one thing I should like to call the attention of some of our mining engineers to. I think the old method of stamping tin stuff could be done away with, and a better method of cleaning th tin by having a powerful crusher constructed, so as to crush it to any size required, by bringing the rolls nearer together, by the same kind of screw used in sawmills, and to have different sized sieves, so as to get the stuff to any size the nature of the tin required; then all the stuff to be treated the same way as silver-lead ore is treated. I believe by this treatment there would be a great deal less tin go to the Red River, and much speedier to get through with a large quantity, and at much less cost to lay out in tin floors.

Callington, June 17.

JOHN BUCKINGHAM.

#### PENNERLEY MINE, AND ITS MANAGEMENT.

PENNERLEY MINE, AND ITS MANAGEMENT.

Sir.,—I notice the remarks of "Another Subscriber" in last week's Journal, wherein he states "The agents have reported improvements every week, but until, I think, the last sampling have only returned 75 tons a month; last month, by an extra effort, 80 tons." Now, with your permission, I will just give "Subscriber" the history of Pennerley for the past six months. The latter part of last year the old mine would barely produce 70 tons a month in time to sample, but so soon as Potter's Pitentered on regular runs of ore 70 tons was got without difficulty, then 75, then comes 80 tons, at which time 20 tons might be seen on the floors towards another sampling, saying nothing about the large heaps of ore accumulating underground. The old mine is holding her own, and Potter's Pit is opening splendid. The latter may be classed of itself a rich mine. There is little doubt that Pennerley will be in the market before the end of the year with 120 tons a month. The mine is very well managed, and if all others were conducted on the same sound principles "Subscriber" need not be so cautious in going into a mine.

ANOTHER STARREDEDER.

#### PENNERLEY AND TANKERVILLE.

– I see an enquiry from " A Subscriber" asking why the shares of Penn nkerville should have so different a market value if both mines are prod Sig.—I see an enquiry from "A Subscriper assume where the subscriper and Tankerville should have so different a market value if both mines are producing the same amount of ore. This gentleman is probably a tranger to the Shropshire district, and let me advise him to go into the district and examine the position of the different mines. Without going below ground, he will notice that Pennerley at present is the more distant from a good road. If a railway is made through this district the working expenses of Peimerley would be so lightened that the value of the mine and of the shares in it would, of course, be enhanced. Tankerville, though it would be benefit pechaps, in an equal degree. The land for a railway is said to be all obtained. This shareholder had better support the projected line if he wants his shares to rise in value.

June 18.

[For remainder of Original Correspondence, see to-day's Journal.]

#### THE CARDIGANSHIRE MINES-No. I.

Following our old and respected correspondent, the late Captain Following our old and respected correspondent, the late Captain Matthew Francis, who kept us so well informed upon all matters concerning Welsh mines, his brother, Capt. Absalom Francis, is now giving his attention to the history of the mines of the district, having just published an interesting little volume,\* describing not only what has already been done in them, but also their present position and prospects. His record embraces no less than 134 mines, and as these are referred to according to their geographical position, the relative prospects of the younger mines can readily be judged of. Commencing at the north of the county, he first notices Ystrad Dynon, the lode in which shows good lead and copper ores; he is persuaded that in depth a good mine will be opened out. He refers favourably to Ynystydor Mine, unfavourably to Tre'rddol, and would not be inclined to invest in Llan Cwm Felin. Cardigan Bay Con-sols, embracing Bryn-Arian and Pensarn, does not appear promising; rich ore is found by the bunches, but are short and unreliable. Pwll Roman or Dolclettwr, at Taliesin, has been several times worked; good copper and lead are now being obtained from it. The character good copper and read are now being documed from the fact are now early of the lode is good, and he is inclined to believe that if the engine-shaft were sunk 20 fms, deeper, and levels extended eastward, good results would follow. To prove the mine thoroughly he considers a capital of 5000l, should be raised.

Penpompren has been worked most extensively for some centuries.

past, the main, or Penpompren, vein having been worked away for more than \( \frac{1}{2} \) mile in length over different a dit levels. Capt. Francis considers this one of the champion lodes of Cardiganshire, as it is the same as that of the celebrated Esgair-hir Mine. In Pen-y-bank and Erglwydd there are three lodes, which all run into and form a junction with the main lode of Penpompren. At these junctions good courses of lead and copper are found. The vein is from 6 ft. to 8 ft. wide, and is well filled with blende, copper, and lead ore the matrix being a good gossan and crystallised spar. He should fancy there must be a great deal of ore unexplored in this ground and which will some time be found when proper trials are made for proving these mines, which are now granted with Penpompren. That ore in considerable quantities may be extracted from Tan-yr-allt there is, he considers, no question about, but that a sufficient quantity to meet the expenses of working it can be obtained is very doubtful to him, and it is one of those concerns which he would not consider as a desirable investment. Allt-y-Crib has been worked for centuries past with varied success. It is at present worked by a good spirited company, and a small dividend has been paid. The denset workings have been sulk but little deeper than they were a good spirited company, and a small divided has been paid. The deepest workings have been sunk but little deeper than they were more than 200 years ago. This will now have to be attended to, and he has no doubt success will attend their efforts. Cwm Lery, to the west, was never worked extensively, but the lode, which crosses the river a little below the village of Talybont, contained some lead ore at surface or in the river's bed, which led to the sinking of the shaft for some few fathoms deep. In driving this work ing of the shaft for some few fathoms deep. In driving this work some good lead ore was raised from it, and the stuff obtained has a very healthy appearance. From West Blaen Caelan no great quantity of ore has yet been got. Blaen Caelan appears to offer questionable prospects. He believes the lode already worked. tity of ore has yet been got. Blaen Caelan appears to offer questionable prospects. He believes the lode already worked on in this mine is the principal part or portion of the Esgair-hir great lode, and that depth in this property is requisite for the finding of bunches of ore in paying quantities. Esgair-hir is one of the very old properties that has yielded immense quantities of both lead and copper ores. The present company have had the property about two years, and have added considerably to the machinery formerly on the mine, and they have recently struck into solid courses of lead ore from 2 to 3 ft, wide, which are continuing to open out in length, and at no distant period this property must, he considers, unguestionated. at no distant period this property must, he considers, unquestionably stand foremost amongst the dividend-paying mines of Cardiganshire. He believes that immense bodies of lead will be found under

At Eaglebrook they are laying open good paying ground. In Cwmdwr Bach, to the east, wherever the lode has been cut into good ore has been found. At Hafan and Henfwlch, although a great deal of money has been expended in making trials, they have never been attacked as they ought, and the principal part of the ore ground has never been seen in the adit level driven in some hundreds of fathoms for that purpose. From Bwich Stellyn, southward, no returns have been made. Cwindwr Mawr, to the east of Bwich Stellyn, has two very fine lodes; he believes that with a good field of machinery good management, and 500°, the property could be made to pay good profits. At Nont-y-much there is no doubt in his mind that in opening east and west on the course of the lode, as well as north and south on the cross lode, immense bodies of lead ore will be laid pen. North Plynlimmon is not worth working, being Crown pro-erty, with 1-12th dues, and other absurd conditions. Plynlimmon. if worked more energetically, would, instead of being searcely able to meet costs, make excellent profits. Cynell Fawr is unworked, but worthy a trial. Elgar is opening out a very valuable property. At Court Grange, to the west of Elgar, there is a great piece of unexplored ground on the main lode east of the present workings, which when tried, and this should be done at once, would prove to be one beginning from your workings, and the visit surface. Manyald be ore-bearing from every appearance of the vein at surface. Mynydd Gorddu, with a moderate amount of capital, and with proper management, is, he thinks, safe to become a very profitable and lasting property. Tynewydd, if it could be obtained at a moderate ing property. Tynewydd, if it could be obtained at a moderate royalty, is well worthy of a trial. At Tynant, or West Esgair Hir, they are laying open rich courses of silver-lead ore. Penpompren, by Cefn Gwyn, requires a small capital to put it into a profitable sycen trays, requires a small capital to put it into a promotion state. He would not recommend the expenditure of large sums of money at Cefn Gwyn, to prove what may in the end turn out unprofitable; he proposes cheap trials instead. Of the Pont Goch lode he does not entertain a favourable opinion. Llanerch deserves fur-

\* "History of the Cardiganshire Mines from the Earliest Ages to A.D. 1874, with heir Present Position and Prospect." By AISALOM FRANCIS, Mining Agent, En-ineer, and Surveyor. Aberystwith: Morgan, Pier street.

ther trial. Llawr Cwmbach requires extensive machinery, but is likely to turn out rich and favourable in depth. Lletty Evan Hen, is of great size, but nothing seems to have been obtained from it. It is the same with Llechweddhaleg, also forming part of the Vaughaa. At Bronfloyd the course of ore yet developed is of no great length, but he considers other courses will be found in the grant. At West Bronfloyd depth is required to get into good lead-bearing ground. At North Bronfloyd a vein has been intersected of some promise, containing a good mixture of lead ore. ther trial. Llawr Cwmbach requires extensive machine

North Bronfloyd a vein has been intersected of some promise, containing a good mixture of lead ore.

Great West Van, formerly called Esgair Lle, does not yield sufficient ore to pay the cost of raising; it is many miles from Van. At West Esgair Lle they are making their trials fairly, and he has no doubt that success will attend their operations. At Bryn Glas he has every confidence of their being rewarded for their outlay. Bryn Weath, or West Bryn Glas, Capt. Francis describes as a good property, which will undoubtedly be saon developed. Corbett's Mine has produced a very good pile of lead ore, which is now on the mine. At a moderate royalty Hirnant Mine would be worthy of trial. Nant Caerhedyn is in the same position. At South Plynlimmon they have not been successful, but the bottom levels are promising. Dinas has a promising but unproved lode. Tynyrhos has a vein 1 in. wide. California has a vein which, if properly tried, will, he thinks, undoubtedly lay open a good mine. IThe Bog lode is not large, but he believes that if the mine were opened out thoroughly it would give success. From Llywernog during the last 35 years no good result has been obtained. In Powell Unite there is good ore ground, and profits are anticipated. For Clara Consols Captain Francis prognosticates a good future. West Powell is, he thinks, certain to open out at an early date into a good dividend, paying mine. Cwmbrwyno is from all appearance on the eve of paying mine. Cwmbrwyno is from all appearance on the eve of entering the Dividend List.

The East Darren, in the hands of Messrs John Taylor and Sons, is one of the best dividend mines in the county. At West Cwmsymglog. Capt. Francis thinks there can be no question about finding ore again, but it will require a considerable capital and some years to place in but it will require a considerable capital and some years to place it in a profitable state. Cwm Darren is of doubtful value. Great Darren will require much time and outlay before it is made to return profits, but he considers that it is now promising. Junction Mine has two lodes passing through it. South Darren looks well, particularly in the bottom levels. Capt. Francis is persuaded that Cwm Erfin, with a moderate amount of capital, and under proper management, can be made rich and permanent. Bwlch Consols has a good course of ore in the bottom. Caenant requires capital to permit of its beitg profitably worked. Pencraigdu has a lode which carries a good gossan, and has as fine a back as any in the district. At Level Reich much work has been done, to a depth of 89 fathoms. At Level Reich much work has been done, to a depth of 89 fathors. Goginan, if it had been fairly worked, would, he thinks, at the present

Goginan, if it had been fairly worked, would, he thinks, at the present moment be the richest mine in Cardiganshire. West Cwm Erlin would, with 5000L judiciously expended, in all probability become a permanent dividend-paying mine. At West Goginan they have opened on the lode in the adit, and are now sinking a shaft on its course under the adit, the vein producing in all the workings small quantity of lead. West Blaendyffryn has a lode composed of a nice looking quartz and gossan. Blaendyffryn is likely eventually abecome a paying mine. At Nantyarian sufficient has not been done even to speak of the probabilities of success. Nantycria will, he thinks, with the present price of blende, realise handsome profits. West Nantyeria is a very prunsing piece of ground. Essair Givinon West Nantycria is a very promising piece of ground. Esgair Gwinion, on the same lode, is well deserving a good and spirited trial. Cown Mine is, probably, on the great Van lode; the lode may be ranked

as one of the champion lodes in Cardiganshire.

From the above, which may be regarded as the crude facts given by Capt. Absalom Francis, the general character of his book may be judged of, though the extracts are culled from only 60 pages of the 150 of which the book consists. The work will prove invaluable not only to those interested in Cardiganshire mines, but to investors generally, and in next week's Journal we shall collect the facts from

the remaining portion of the book.

#### CORUNDUM-ITS HISTORY AND USES.

As steps are now being taken to turn a valuable deposit of corm-As steps are now being taken to turn a valuable deposit or criminadum to commercial account, by the formation of an English company with an adequate capital to develope it, the exhaustive article just published in Messrs. D. Appleton and Co.'s "Popular Science Monthly," of New York, will not be uninteresting, Itis remarked that, although corundum has been in use as an absairs. from an early age and under various names, it was not until near the commencement of the present century that its localities were found and examined by scholars, and its true place in mineralogy determined. For thousands of years the Chinese had used it most the name of adamantine spar; the Persians, as armenian whete stone; the Hindoos, as corundum; and the Egyptians, as the instance of the Red Sea. The natives of these countries had gathered it from the beds of mountain torrents, or in the alluvium of the v. I'eys, after the annual rains had washed it down, freeing it, in the tennit, from it a second to minerals and impurities; but no attempt transit, from its associate minerals and impurities; but no attempt at its legitimate mining had ever been made until within the past two years, in the United States, in the State of North Carolina. The mineral, from whatever locality it comes, is now known in science and commerce as corundum—the name given it by the Hindows and meaning cinnamon-stone, from the resemblance in colour to

and meaning cinnamon-stone, from the resemblance in colour that article of the variety found in their country. It is pure crystallised clay or alumina, and is the next hardest substance in nature to the diamond, reducing to powder all substances are that gen. Until the researches of Hauy, the distinguished French savant, about the commencement of this century, the three forms of alumina known as sapphire, corundum, and emery were supposed to be distinct species. His analyses made them three varieties of one species, a decision confirmed by chemists since, and now universally accepted. The earliest extended reference to corundum of any value to science or trade appears in a joint paper by Count Bournon. of Paris, and The earliest extended reference to corundum of any value to science or trade appears in a joint paper by Count Bournon, of Paris, and Sir Charles Greville, of London, prepared for the Royal Historical Society of London in 1798; which was soon followed by a more circful mineralogical treatise by the first-named scientist, prepared by him for the same society. Sir Charles Greville's observations were based on data collected by him at a point in the alluvium in India where the natives had for ages gathered the mineral. Those were based on data collected by him at a point in the alluvium in India where the natives had for ages gathered the mineral. Those by Count Bournon were the results of his studies of the mineral at Paris, from specimens brought him from several points, especially in India and Ceylon. At a later date we have interesting information from Sir Alexander Burnes as to the celebrated ruby locality of ancient Bactria; and from Sir James Tennent and Sir Samuel Baker as to the famed sapphire districts of Ceylon, which were carefully examined by them during a protracted residence there. A most interesting account of these localities was also published in the "Ceylon Observer" for June, 1855, by Mr. William Stewart, of Colombo. In the "American Journal of Science" for the years 1856, 1851, and 1866 are three papers on granular corundum, or emer-by Dr. J. Lawrence Smith, of Kentucky; the first two descriptive of the emeries of Asia Minor and localities on the islands of the e third on the mine in Western Massachusetts, known as the Chester Mine. These papers are of the first importance

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as the Chester Mine. These papers are of the first importance in all questions concerning the commercial emeries of our own or foreign countries, and cover the ground of investigation to the date of the North Carolina discovery, and the communications thereon enumerated in the opening paragraph of this article.

Up to the date of 1871 corundum, or its gems, had never been found in quantity in sith. Both were looked for in mountain torrents, or beds of gravel at their base. Emery had for many years been mined in the islands of the Ægean Sea, but had not been scientifically studied in position, until the researches of Dr. Smith alluded to; since which date, however, it has been found in place at various points in our own and other lands. About the year lead it became known that corundum existed in small quantities all along the mountain line of sea coast, from Maine to Georgia; and 25 years since it was found in boulders, in considerable quantities in South-Eastern Pennsylvania. Near the same time a large free mountain fractions of the same time a large free mountain fractions. in South-Eastern Pennsylvania. Near the same time a liment of massive sapphire was picked up in Western North and elicited much attention from mineralogists; but careful further

search in the locality for it being fruitless, there has been since but little effort to find it at any point in the Appalachian range. What-little effort to find it at any point in the Appalachian range. What-little effort to find it at any point in the Appalachian range. What-little effort to find it at any point in the Appalachian range. What-little effort was made, however, settled the point that corundum existed in considerable quantity and different degrees of purity at existed in considerable quantity and different degrees of purity at existed in considerable quasities and in the spring of 1871 Col. C. W. Jenks, of St. Louis, being in want of an abrasive more powerful than Naxos emery, started out into of an abrasive more powerful than Naxos emery, started out into of an abrasive more powerful than Naxos emery, started out into of an abrasive more powerful than Naxos emery, started out into of an abrasive more powerful than Naxos emery, started out into of an abrasive more powerful than Naxos emery, started out into of an abrasive more powerful than Naxos emery, started out into of an abrasive more profitably. From many localities dwher the mineral had been found on the surface in considerable quantities. A canal had been found on the surface in considerable quantities. A canal had been found on the surface engaged as miners, and ground gang of a dozen mountain near that furnished hydraulic power; a was cut from a mountain near that furnished hydraulic power; a was cut from a mountain near that furnished hydraulic power; a was cut from a mountain near that furnished hydraulic power; a large of a dozen mountaineers were engaged as miners, and ground gang of a dozen mountaineers were engaged as miners, and ground gang of a dozen mountaineers were engaged as miners, and ground gang of a dozen mountaineers were engaged as miners, and ground gang of a dozen mountain near that furnished hydraulic power; a large proceeded to guide in mining for corundum, experience being no precedent or guide in mining for coru rundum. Eight months of hard labour settled the question that corundum was there in immense quantity, and that it would be found in veins varying, as is usual in other minerals, from a few inches to several feet in width. These should be termed, what they inches to several feet in width. These should be termed, what they inches to several feet in width. These should be termed, what they inches to several feet in width. These should be termed, what they inches the gangue being of various minerals, generally however, of ripide lite as stated; but sometimes that mineral running into mica-schist, the saving inferestite, and felspar. In one of these veins in a the gangue being of Values that mineral running into mica-schist, lite, as stated; but sometimes that mineral running into mica-schist, lite, spinel, jefferesite, and felspar. In one of these veins, in a pocket of jefferesite, a golden-yellow mica, there was found much the largest and finest crystal of corundum known, of a fine sapphire and ruby colour, weighing 312 lbs., and now the property of Prof. Shepard, of Amherst College. This unique specimen would undoubtedly command \$1000, were it for sale, various collectors of Europe being anxious for its possession. Corundum from this mine proves to be of excellent quality. Taking sapphire as the standard at 100, the product or the mine has a power of from 90 to 97 as an abrasive, while that of the best emery, the Naxos, numbers from 40 to 57. The veins, five of which have been opened, run north-east and south-west, dip under at an angle of 45°, and are at the deepest point reached 7 to 10 ft. wide. There is also remarkable association of other interesting minerals of tourmaline, spinel, zircon, &c., while the crundum itself shows almost every shade of colour from white to black. It is also remarkable that the mine contains all the varieties in colour, texture, and crystallisation found in the aggregate the communication and crystallisation found in the aggregate corndum localities of the globe. Association of two colours in the same crystall is spoken of by the best writers as a somewhat rare matter even in Ceylon. One crystal was shown us from this mine weighing 2 lbs., with blue, ruby, pink, yellow, and green colours of great brilliancy and transparency; and a small hand collection, which contained a variety in form, perfection, and purity of colour not equalled by any collection of corundum in the known cabinets of Europe; for from no other locality have such specimens been found, excepting in the perfect gems from Ceylon and Burmah.

We now come to the most interesting feature of the mine. It was natural that, with so much of purity in the amorphous mineral and perfection and beauty in the crystals found with it, Col. Jenks should conclude that there might be gems in the mine. But from no quarter but his own observations did he get any encouragement in this direction. The best English authority on gems and their localities,

but his own observations did he get any encouragement in this direction. The best English authority on gems and their localities, Prof. King, of Trinity College, Cambridge, says:—"The corundum gems have never been found in place, but always in the alluvial or sands of the rivers." After eight years of residence in Ceylon, the source from which the best sapphires of the world have come from an early period, and much acquainted with the best gem-localities of the island, Sir Samuel Baker remarks:—"The sapphires were created in the peculiar secondary formation where they are always found, which is composed of water-worn pebbles, in a conglomerate of blue and white clay, buried 10 to 20 ft. beneath the surface of the valleys, &c. This was the opinion of Buffon and other eminent. of blue and white clay, buried 10 to 20 ft. beneath the surface of the valleys," &c. This was the opinion of Buffon and other eminent scholars. The ruby localities of Bactria, visited by Alexander Burns, are said by him to be of similar character. Sir James Tennent, in his elaborate work upon Ceylon, expresses similar views, saying "The gems are not found in place, but in the alluvial at the base of mountains, 20 ft. below the surface, in a secondary formation of water-worn pebbles, with occasional lumps of granite and gneiss; on the side of which, by the eddying of water are often hollows, in which gems, also water-worn, are frequently found. In the clay also holding these pebbles are also water-worn cavities, called by the natives "elephants' footsteps," in which gems are found in groups, as if washed in by the current; associated with these gems is a debris of spinel, felspar, tourmaline, steatite, zircon, chrome, magnetic iron," &c. Yet he also ventures the opinion, from a survey of the whole subject, that gems might be found in place in the island. He says, in confirmation of this view, that he saw in one of the mountain ranges "a stratum of grey granite, with iron pyrites and molybdens, which contained great quantities of very small rubies." Whether he ascertained the nature of the gems he calls rubies by analysis, or only from casual observation, he does not say; but Whether he ascertained the nature of the gems he calls rubies by analysis, or only from casual observation, he does not say; but gamets of great beauty so often occur in such a matrix that it would not be safe to rely on those stones he saw, unless analysed, as the ruby corundum. Seeking information from a later, and perhaps we are justified in saying on this matter the most eminent, authority, that of Dr. J. Lawrence Smith, of Kentucky, he says, in substance, "The gems of corundum cannot be expected to appear where the amorphous masses of the mineral abound; and vice versa, that corundam for commerce will not be found with the precious gems," &c., his conclusion being based upon the "diverse composition of the two forms of the mineral shown by analysis, and which would require for their formation different geological and mineralogical conditions," &c.

Not dismayed by this array of scientific opinion and experience, Col. Jenks made careful examination of the material as it came from the miners hands, and the results led him to give them special instructions as to the nature of their operations. As the geodes in the formation of silica have been found to contain the finest quartz crystals, he hoped to find in the mine something of the same character of alumina. He was rewarded by one or more large pockets of geoles of dark-green chlorite, from the size of a walnut to that of a 50-lb, shot, within which were one or more crystals of corundum, sometimes blue and white, and in few instances of ruby colour. sometimes blue and white, and in few instances of ruby colour. None of them were entirely transparent; none of the goods had carities, as is the case in those of quartz formations, yet the prospect in this direction is most promising. The result thus far, however, is most encouraging in the rock stratum itself, which is the proper gangue of the corundum. With the hundreds of tons the mine has yielded for abrasive purposes the workmen have taken from has yielded for abrasive purposes the workmen have taken from the place of their birth a solid undisturbed matrix of ripidolite, beautiful specimens of the nine corundum gems known to lapidaries by the prefix "Oriental," because of their superior hardness and brilliancy, and also because those of this character in lustre and composition were first brought from the East. These are known by mame as Oriental sapphire, ruby, emerald, topaz, asteria, amethyst, chatoyant, girasol, and white or calcurless apphire, this last often chatoyant, girasol, and white or colourless sapphire, this last often used in place of the diamond. The general characteristics of these daries of this country and Europe pronounced as not inferior to those of the best localities of the Old World. One of them was sold to a lapidary of Amsterdam, Holland, for \$4000. Others of much beauty have been cut, and are owned in this country and Europe. beauty have been cut, and are owned in this country and Europe. It is connexion it is of value to note that Count Bournon, during found in formalism, made a list and analysis of the associate minerals found in formalism.

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gems of his mine. All the minerals found in the Ceylon gem de-posits are found in the North Carolina locality. There can be no doubt, therefore, that Col. Jenks has made the

discovery in America of the most precious gems next to the diamond, where they have been sought for in vain elsewhere, in a matrix of solid rock formation. We look for further interesting developments of this unique and thus far unparalleled alumina deposit.

#### IMPORTANT INVENTIONS-BLAKE'S STONE-BREAKER.

It has long been acknowledged amongst miners, both in England and elsewhere, that few machines have ever been introduced which have done so much to facilitate the economic treatment of minerals, and thus make mining enterprise more highly remunerative, than the well-known "Blake's Stone-Breaker" with which invention the name of Mr. H. R. MARSDEN, of Leeds, is inseparably connected wherever mining operations are carried on; it must, therefore, be gratifying to all to know that his ingenuity has not only secured him an ample pecuniary reward, but has already earned him the greatest honour which his fellow-townsmen have the power to bestow—that of being elected to fill the highest municipal office. Under these circumstances his autobiography will be generally



The Right Worshipful the Mayor of Leeds, Alderman Henry Rowland Marsden, the subject of the present sketch, was born at Leeds, July 20, 1823, and being the fortunate possessor of a natural inventive genius was apprenticed to the well-known William King Wesley of that the support of the supp Wesley, of that town. At a very early age his superior ability was acknowledged in the works in which he was engaged, and after being there 8 years, he received an appointment as manager in one of the Leeds engineering tools manufacturing establishments; but desirous of seeing more of the world, and having more scope for his inventive talents, he left England three years after his apprenticeship avaired, and went to that great high-place of inventions. ticeship expired, and went to that great birth-place of inventions, the United States—there he completed and patented one of the best injectors for steam-boilers ever known, and also with untiring energy and perseverance carried out and patented very many great im-provements in marine and stationery engines and machine tools, &c. After introducing his world-renowned and invaluable Blake's stonebreaker and ore-crusher in that country, he returned in 1862 to his native town, from which place his fame has justly gone forth to the whole world as the maker and inventor of the machines of this whole world as the maker and inventor of the machines of this class, which have by him, at a vast expenditure of money, time, and talent, been so improved upon by patents that now they seem as near perfection as such machines can possibly be; indeed, it has been said of these machines, with their newly-patented improvements, as was said of Nasmyth's steam-hammer upon its introduction to the world, they justly rank with the marvellous, and continually has the writer heard it remarked by those who have them in use that they are a wooder and a fascination; but the nurroes of raise out. the writer heard it remarked by those who have them in use that they are a wonder and a fascination; but the purpose of going out of the way to give these details is that honour may be given where honour is due, for Mr. Marsden in all his works has not sought to benefit himself alone, but by every means in his power to better the condition of his fellow-men. His motto right through life has been as his principle—"We live for one another, and not alone for ourselves." If contributing according to his means is required of every man, faithfully has he met the requirement; he has too, after an immense outlay in experiments, succeeded in bringing to perfection what he specifies as his "new patent cubing jaw" for breaking road. immense outlay in experiments, succeeded in oringing to perfection what he specifies as his "new patent cubing jaw" for breaking road metal to exact size and shape required for road-making, so that now there is no longer any need for the employment of human stone breakers, which all friends of humanity will rejoice at, for such because a convinue agree heap recorded as degrading. These abour has ever, in a certain sense, been regarded as degrading. There is great credit due to him also for the simplicity of his invention. This term will be best appreciated by those interested in the work, This term will be best appreciated by those interested in the work. The patent is not at all complicated, so simple, yet so effective—why did not some one find it out before? Many have since declared they could have done. Well, it is the old story of Columbus and the egg; they all know how to do it now he has shown them, only there is this difference in the two cases, that it would not have benefited the ancient discoverer quoted to have taken out a patent for his broken egg, but it would and has done our maker of the abovenamed patent cubing jaw, and he has very wisely protected and secured his right. This invention also enables mine agents to do away with female labour in mines, so objectionable to the philanaway with female labour in mines, so objectionable to the philanthropist, and so highly detrimental to morality. This brief account of Mr. Marsden's capabilities will, doubtless, meet the eye of many whose business relationship with him will have led them to admirthe man, but as in many other cases so, with the strictest regard for truth, it may be said here that these who know him best esteem him most. Speak to whom you will in his native town where he has risen to the honourable position of chief magistrate, or wherever else he is known, and all parties and creeds have a good word for found in transitu with the sapphires of Ceylon. Col. Jenks has had him, and claim him as their own; he is a most persevering worker

a similar list and examination made of those found in situ with the gems of his mine. All the minerals found in the Ceylon gem deposits are found in the North Carolina locality.

in municipal business, which in his case at least is no sinecure: in fact, the wonder is the vast amount of work he accomplishes. As named before, all classes claim him, and where necessary not only named before, all classes claim him, and where necessary not only is his ear patiently at their services to listen to their complaints, but as the old addage runs "pity without relief," &c., so his purse strings are never tightened if the contents are needed for a good cause. He is emphatically the right man in the right place; the difficulty would be, the writer thinks, to find a place he was unfit to fill. In his present high official appointment he is, of course, supposed to belong to no political side, but out of the civic chair he is a strenuous advocate for his own party, a right loyal man, full of zeal, yet zeal so well tempered with kindness of heart and manners as does for him and cannot fail to win for anyone the fortunate possessor of such urbanity the love and esteem of all, even of his political opponents. olitical opponents.

The object of the present memoir would not be attained by running into what might seem to those unacquainted with Mr. Marsden, to be fulsome eulogy; it will suffice to say, in conclusion, that he has received from the Royal Agricultural Society of England, from the Royal Cornwall Polytechnic Society, and from numerous learned and scientific bodies no less than 45 first-class gold and silver medals for his patented improvements in machinery. And in conclusion for his patented improvements in machinery. And, in conclusion, the writer ventures a remark (having heard it reported in Leeds that Her Majesty would be advised to confer the honour of knighthood upon him) that there cannot be a man in the three kingdoms to whom such an honour is more justly due; and as there is no doubt Her Majesty cannot be insensible to the likes and dislikes of her subjects in the metropolis of the North, she will it is hoped be so advised, for all Leeds would as one man regard it as a high compliment for its present chief magistrate to receive the gracious command "Rise Sir Henry Rowlead". Henry Rowland.

With regard to the portrait with which this notice is headed, it may be remarked that it is from a photograph by Mr. W. Child, of Leeds, and is an excellent likeness of the subject of the memoir.

#### MINING SKETCHES-No. II.

WELSH FREEHOLD COAL AND IRON COMPANY (LIMITED),

In 1872, having a little spare cash, I was induced to take a few shares in this company, and although I have often called at the London offices, looked at the plan of the estate and a photograph of the marager's house, met the Chairman and the secretary, and had many pleasant chats with them, and received all the information I required, I thought, as the company seemed so long in getting into working order, that I would run down into Wales and see if such a colliery really existed, and what was the position of affairs. One fine morning I jumped into the Great Western express, and in about six hours I found myself at Neath, and put up at the Castle Hotel. On enquiry, I soon found that the Welsh Freehold Coal and Iron Company's colliery was well known and being told a tran would On enquiry, I soon found that the Welsh Freehold Coal and Iron Company's colliery was well known, and being told a trap would be an advisable thing, I ordered one to be ready early next morning. After a substantial breakfast I started off, and was soon on the hill, enjoying a most delightful drive. I tried to see what the driver knew of the colliery, but his knowledge only extended to the fact that he had on two or three occasions driven up some of the directors, and had seen some fine horses which had been sent down to work the colliery. After riding along a dreadfully rough road for about an hour, we crossed the South Wales Mineral Railway, and soon afterwards my companion pointed out to me the new railway. work the colliery. After riding along a dreadfully rough road for about an hour, we crossed the South Wales Mineral Railway, and soon afterwards my companion pointed out to me the new railway made by the company. Wishing to see everything, I determined to walk along the line, and bade my driver go along the read. The first thing which attracted my attention was the deep cutting at the junction, and here at once was visible the heavy work which had beset the contractor, it having slipped in upon him, I was informed, no less than five times. Continuing along the line about half-a-mile, the railway crosses the river, and I was pleased to notice the splendid solidity of the bridges, all being built of stone, with iron girders. Continuing onwards about half-a-mile I came to the first level, here I found the office, and in it Mr. Mainwaring, the company's colliery manager, who received me very politely, but being much engaged for half-an-hour, I wandered along the line to the end, which is at the upper level, where an engine-shed is erected, in which the company's locomotive stands when not in use. I was much struck with the general appearance of the railway, the solid formation and superior construction thereof, and consider it a great credit to the engineer, whoever he may be.

Returning, I found Mr. Mainwaring disengaged, and he offered to show me all over the estate, and what had been done towards opening up the colliery. I quite expected to find little or nothing doing, but judge my surprise to see a regular hive of bees busily at work, splendid screens (erected at both levels), and upwards of 150 men cutting, screening, and shooting coal; and although the railway was only got into working order during the middle of March, yet I found the company were sending nearly 1000 tons of coal weekly to market, and would go on increasing. I found that levels had been opened up for nearly 2 miles underground, rails laid, and in thorough order; about 12 new cottages have been erected, and between 20 and 30 old ones put in t

order; about 12 new cottages have been erected, and between 20 and 30 old ones put in thorough order; the manager's house had been put in repair, and capital new stables built for the colliery horses. On going round the company's 1300 acres of freehold, I noticed that about one-third of it was thickly studded with larch and fir trees, which were being sold and used as pit-props; the rest of the land was being farmed by the company. I was informed they possessed between 400 and 500 cheen and that they had about of the land was being farmed by the company. I was informed they possessed between 400 and 500 cheep, and that they had about 150 head of cattle in to graze, some of the land being shut in to make hay for their own horses. It was now getting late, or I should have gone over to the Nant-y-Bur property, which the company hold on lease, and where the Diamond Rock Boring Company are at work, boring down to ascertain the depth to the Resolven seam, and to which the manager informed me the directors intended sinking. Evening now setting in, I bid Mr. Mainwaring good-bye, and wended my way back to Neath, much pleased with my day. I felt that I had not invested my money in a bad concern, and, moreover.

wented my way back to Neath, much pleased with my day. I felt that I had not invested my money in a bad concern, and, moreover, that the directors had acted in a thoroughly business manner, everything seemed to have been well done, and only after mature consideration. I am confident, if any of my brother shareholders will visit the property, that they will return much pleased, and be satisfied that they hold shares in a genuine and well-managed concern.

MINING OPERATIONS IN IRELAND.—A well-informed correspondent, writing from Carrickfergus, says from mining in that county is rapidly progressing, and promises ere long to become a great national industry. Another successful undertaking has to be added—that of Irish Hill, in the parish of Ballylynure. The royalty was taken by an English company, and opened towards the close of last year. The undertaking has been most successful, upwards of 2000 tons of ore having been exercated in five months. The bed of the one lies in a northessterly direction, and into these three levels have been driven—the Downshire, Vaughan, and Wardhough. A number of workings are being carried on in the rise and dip of the former two levels, and all the ore is exercised, excepting here and there pillars 10 to 12 ft. square are left standing to support the roof, which is of hard solid basalt. There is a main tunnel called the Marshall air course, which thoroughly ventilates the drifts and the various workings existing between them. The first ore is known as pisolitic hematite, the thickness of which is from 1 ft. 6 in. to 3 ft.; the second ore, known as aluminous, from 2 to 4 ft. in thickness; and the third, known as lithomarge, from 3 to 12 ft. In driving the Vaughan level, the oce proves to be splendid dark-brown hematic or hydrated perosides (60 per cent.), and is never less than 3 ft. thick. When recourse has to be made to blasting the over the ordinary method of firing by means of a fuse is not adopted. A wire runs along the roof of the main ways, leading from the headways into the nearest workings, and terminating in a small galvanic cell. The miners charge their boring in the ordinary way with gaupowder. A thin from wire is attached to the leading wire, and introduced into the powder; the hole is then tampel, and the ore is blown up from the working by simply attaching the leading wire to the galvanic cell. This method is absolutely free from danger, and is accomplished in much less time than by the fuse process. The agent for the mi MINING OPERATIONS IN IRELAND. - A well-informed corre-

Holloway Pills remove debility, biliousness, liver and stomach complaints. This inappreciable medicine is well known throughout the world, and the cures performed by its use are so wonderful that it now stands pre-eminent above all other means for the cure of bilious and liver complaints, disorders of the stomach, drops, and debilitated constitutions. In these diseases the beneficial effects of the pills are permanent; the whols system is renovated, the organs of digestion healthfully roused, and free respiration promoted. These salutary steps are gained without any drawback, since the pills purify and strengthen simultaneously; they improve the appetite, stimulate the circulation, and rouse the nervous 8-nergy necessary alike for comfort, health, and for both bodily functions and mental operations.

#### Meetings of Public Companies.

#### HOLCOMBE VALLEY GOLD MINES COMPANY.

A special general meeting of shareholders in this company was A special general meeting of shareholders in this company was held at the offices, Austinfriars, on Tuesday, to take into consideration the advisability of completing the share capital, with a view of providing funds for the better prosecution of the company's business, and to pass the necessary resolution relating thereto,

Mr. COURTENAY in the chair.

Mr. W. J. LAVINGTON (the secretary) read the notice convening

the meeting.

The CHAIRMAN said that at the meeting in October, and in the re portissued in anticipation of that meeting, attention was particularly directed to the necessity of speedily raising fresh capital, or, rather, of placing the forfeited shares. At that date it was their intention to erect a 10-stamp mill, but subsequently it was found impossible to do so, for this reason. Before the advices could reach America some time necessarily elapsed, so that the machinery for a mill could not possibly be taken to the mine and erected before the winter. not possibly be taken to the mine and erected before the winter. Moreover, Mr. Bowe, who at the time was in California, after consulting with Mr. Haley, resolved to pospone erecting the 10-stamp mill, but at once to get five stamps put into the old mill, so as to thoroughly test the ore. It was with difficulty that was done, because the winter set in before the stamps could be got to the mine. This mill, however, was put to work on Jan. 15, but shortly after the water in the reservoir run short; when this and other difficulties were overcome the mill was re-started on February 2 and run till March I, when it was again shut down for want of additional shoes. March 1, when it was again shut down for want of additional shoe which could not be got to the property during the winter. But the mill ran 23 days, and during that time treated 150 tons of refuse rock, and 50 tons of rock such as is now exposed in the mine. Mr. Haley says he is perfectly satisfied with the result of the test, and is certain the ore will give 330 to the ton. It would appear that the 50 tons yielded \$15 to \$16, and the 150 tons refuse \$4 per ton; but all are aware that at the commencement of such operations it requires 50 per cent. of first run to coat the plates, so that Mr. Haley is of onlying the ore should run the very high average he has indicated. requires 50 per cent. of first run to coat the plates, so that Mr. Haley is of opinion the ore should run the very high average he has indicated. The actual amount returned was \$13±2. The mill was again started up on April 1 and ran till April 30. During that time 151 tons were treated, but the result has not yet been received by written advice. Mr. Haley, in a letter published last week, stated he was going to Los Angelos, and would take the bullion with him, and advise the result. On June 7 a telegram was received which is not easy to interpret by itself, but taken in connection with the letter something could be made out of it. The telegram ran thus: "Free gold, \$12; sulphurets, \$30." They interpreted it to mean that the last run of ore yielded in free gold \$12; and the sulphurets \$30 per ton. This is important, because it shows an extreme richness of ore in sulphurets. They had always been told the ore was rich in sulphurets, and one reason why Mr. Haley had been unable to pay expenses was that the gold in the sulphurets could not hitherto be saved. Assuming that the 20 tons contained 5 per cent. of sulphurets they should produce 1 ton of sulphurets, and in a letter they had recently received from Mr. Bennet the assay value of the sulphurets were put down at from \$100 to \$400 per ton. If this telegram has been correctly interpreted, the sulphurets were of a much higher value still, but he would shrink from reckoning the ore at so great a value. The important point to consider was that this ore had been taken from the 50 feet level. Mr. Haley says of a much higher value still, but he would shrink from reckoning the ore at so great a value. The important point to consider was that this ore had been taken from the 50 feet level. Mr. Haley says "The ore in the 50 is by no means equal to that in the deeper part of the mine—the 120 feet level." Mr. Haley had been unable to work that deeper level, because the pumps had to be taken from the mine and used for other purposes. Since the last meeting the mine had gone on gradually improving. Last May they were all startled by Mr. Haley announcing that the ledge had become poor, that the prospects of the mine were bad, and that he had stopped the building of the 20-stamps mill. In a few months an improvement took place, and up to the present time the mine had gone on steadily improving; and he (the Chairman) need hardly say that he was extremely glad to find Mr. Haley's tone had now completely changed. Mr. Haley now says—they are perfectly justified in going on and prace, and the the Chairman) need hardly say that he was extremely glad to find Mr. Haley's tone had now completely changed. Mr. Haley now says—they are perfectly justified in going on and erecting a 20-stamp mill. The ore in the 120 ft, level will run 330, and Mr. Haley would not be surprised if it gave \$60; it should be recollected that the original estimates were based upon \$15, so that under any circumstances they could safely reckon on the original computations being fully realised by actual results. But it now became a question what they were to do—they had at their disposal some forfeited shares, and they had been hoping that Mr. Haley would have offered some fully paid-up shares as an inducement to the other shareholders to come forward and take up the forfeited shares. They were in debt, according to the last accounts, about 15002, but against that there is the bullion, which should realise between 2002, and 3002. As to the mill, an original contract was made for a 20 stamp: when Mr. Haley postpool its erection he agreed with Messrs. Booth, the contractors, that the machinery should remain upon their premises free of charge, and that they should be paid \$13,500 for the mill; Mr. Haley paid \$200, leaving \$5500 due. When Mr. Bowe was in California he saw one of the partners of Messrs. Booth, with whom an arrangement was made, if the company so wished, to supply the complete machinery for a 10-stamp mill for \$1500 more. Therefore, it would be for the shareholders now to say whether or not that arrangement had better be adhered to. The board considered 20000, would be requisite to pay the freight and erect a 10-stamp mill and Mr. Bowe had anthorised the directors to say that those who took up the foreited shares should have transferred fully paid-up shares in the proportion of on for every two—in other words, a bonus of 50 per cent.; there were 4000 foreited shares, and their re issue would exactly complete the capital of the company, and it was now for the shareholders to consider whether they would assis

Indefeasible title.

Mr. G. BATTPIES reminded the proprietors the property was acquired on the report of Mr. McLean, of the Sweetland Creek, and there was no reason whatever to alter the favourable opinion then formed—that they had an exceedingly valuable property, and secured upon most advantageous terms. All the machinery required was comparatively trilling, but it was proposed to erect a 10-stamp mill, so as to apply another 10 stamps at some future time.

The Chairman said that the outlay of 1000! would enable them to test the value of the gravel claim, but if the shareholders did not choose to furnish the means an attempt might be made to sell the gravel claim, although from all they could hear it would be a pity to do so.

ar it would be a pity to do so.

Mr. Bowe said:—While in California I paid two visits to the Mr. Bow's said:—While in California 1 paid two visits to the Holcombe Valley property—one in the month of October and one in January last. On my first visit I found that the Mammoth Ledge had been opened by two incline shafts sunk on the vein—No. 1 incline to the depth of 106 ft., and No. 2 to the depth of 170 ft., the latter being about 50 ft. below the water-line. The 120 ft. level, driven west from incline No. 2, was then in 72 ft. At 37 ft. rich ore was struck similar to that found at 93 ft. from surface, showing that the shoot of rich pay ore most probably rurs obliquely through the vein, which is very common in most of the developed quartz mines of California. I measured the vein in incline No. 2 below the probable of California. wein, which is very common in most of the developed quartz mines of California. I measured the vein in incline No. 2 below water level; at intervals of every 10 ft., and found the lode to average about 15 in. The rock below water level appeared to be more solid than above, but does not carry so much mineral. I think there is every reason to hope, judging from the history of other mines in California, that pay one will come in again by our continuing to prosecute the sinking. There was no indication that I could see of the ledge pinching out. I also measured the width of the lode in both inclines and levels, as far as driven above water level, at intervals of every 10 ft., and found the average width of the vein to be 34 in. The distance between the inclines is 320 ft. The former owners had stoped out and worked the ore between these two points to the depth of from 20 to 40 ft., leaving 80 to 90 ft. becks of ore ground between the old stopes and the 120 ft. level, which it is pretty safe to assume is continuous from the fact that it is very nearly surrounded by inclines, levels, and stopes. This body of one between the inclines, being 320 feet long by (say) 80 feet deep, and 2½ feet wide, should yield something like 4560 tons of ore, which, reckone at 330 per ton, the estimate of Mr. Haley, would of itself justify the erection of a ten-stamp mill. This I do not think is an extraordinary assumption, judging from what I saw when I last visited the mine, and it is not to be presumed that this is all the ore in the Mammoth vein above water level, as there is 400 ft. of ledge east of incline No. 2, and about 300 ft. west of incline No. 1, which is untouched only by shallow surface workings of former owners. Besides this there is the Ohio and San Bernadino veins, the former of which having produced from most reliable authority ore averaging from \$10 to \$50 per ton, there having been several thousand tons of ore treated from ese nat the company's offices.

I his end is the would add to that letter that samples of these specimens level appeared to be more solid than above, but one or the value of the sample of the sample

these veins by prior owners. It was thought best, seeing that the new mill could not be erected before winter, to put a five-stamp batter of the new mill machinery into the old mill, in order to show to shareholders that there was really enough mineral in the ore to justify going forward with the erection of the mill, and at the same time will help to keep down and pay the accruing expenses of the company. The two reported runs have, according to Mr. Haley's letters and telegrams, pretiy well established the fact that the ore in free gold and sulphurets will average near or quite \$30 per ton, instead of \$15, upon which the property was bought. This being the case, a 10 stamp mill will realise what a 20 one would if the ore had only proven to average \$15. There had been several new discoveries in the district, one dowlot that when I was there our property could have been sold in San Francisco for more than our whole capital stock, and from independent information I have no doubt but what it could be sold there now at that figure.

Mr. Harkisox said he had put his name down for 250. of the forfeited shares, because he expected other shareholders would subscribe for their proportion.

A vote of thanks to the Chairman and directors closed the proceedings.

#### ANGLO-AUSTRALIAN GOLD MINING COMPANY.

An extraordinary general meeting of shareholders was held at the An extraordinary general meeting of snareholders was held at the offices, Austinfriars, on Monday, for the purpose of passing a resolution in the form, or to the effect, following:—"That the directors be authorised to increase the capital of the company to the extent of 5000%, or any less sum, by the issue of new shares, of 10s. each, payable 1s. on application, 2s. on allotment, and the balance by monthly instalments of 1s. each, any subscriber for such new shares to have the option for one year of fathing at pars on many of such to have the option for one year of taking at par so many of such shares for the time being unallotted as shall be proportionate to the number at first applied for by him, and that the holders of such new number a thrist applied for by him, and that the holders of such new shares shall be entitled to the same dividend per share as though they were shares of 2l. 10s. each, and such new shares shall rank for dividends pari passu with the original shares of the company."

Major Jelf Sharp in the chair.

The LONDON MANAGER and SECRETARY read the notice conventions.

The Chairman said he had much pleasure in moving this resolution. All he need say was the directors had the most favourable opinion of the mine, and fully believed by the judicious expenditure of the capital thus proposed to be raised successful results would be realised. Of the new shares 4200 had already been agreed to be taken, although some of them under conditions, which he thought the directors which he what the conditions which he thought the directors are the same transfer.

ors would be able to comply with. He then proposed the resolution. Mr. LAMB seconded it, and mentioned that the prospecting shaft, Mr. LAMB seconded it, and mentioned that the prospecting shaft, through which they were now working, had been paying its own expenses for the last four or five months. But it was proposed to sink other shafts, and to drive another level north, to enable them to work upon a large area of ground. One important object to be gained by the new capital would be the sinking of the engine-shaft from a depth of 382 to 400 ft., and to open out the mine, from which such results might be anticipated as to make up for all previous disappointment, and at the same time satisfy all associated with the company. He added that 500l. would enable them to sink several prospecting shafts to a depth of 70 ft., and to open out an increased area of the ground, which was now and had been for some time past paying its own expenses: 2000l. would carry on the mine for 12 months, during which time most important points would be developed.

Mr. Murchison said the result of the proposition now before the meeting would be that the new shares—of 10s, each—would receive the same divided as the 2l. 10s. shares. Some of the parties applied for, or had signed a memorandum to the effect that they would subscribe only if 6000 out of the 10,000 new shares were taken up. The directors thought if 5000 shares were applied for sufficient capital would be a command to successfully carry out the important objects referred to by Mr. Lamb—this would, in all probability, lead to valuable improvements and discoveries, and put the mine in a really satisfactory position. It was also proposed that those who now subscribed for (say) 5000 shares should have the option for a year of claiming a similar number at par of the unissued proportion, so that in the event of discoveries being made those who assisted now might have the full advantage of the success their capital had contributed to realise.—The resolution was put and carried.

A vote of thanks to the chairman and directors closed the proceedings.

#### CLIFTON SILVER MINING COMPANY.

An extraordinary general meeting of shareholders was held on Monday, at the offices, Great Winchester-street, Mr. Davis in the chair.

Monday, at the offices, Great Winchester-street,

Mr. Davis in the chair.

The Chairman said the meeting was of quite an informal character, and, therefore, he would not ask the Secretary to read any notices. At their last meeting, which was held six months ago, a resolution was passed that the mine should be shut up—at all events for the present. Instructions were sent out immediately to do so, and on Jan. 2nd Mr. Sawyer (agent of the company there) wrote to the directors to say that he had been in constant consultation with Mr. Ramage (one of the directors now out there), and that he had on that day actually closed the mine; but that he he had agreed to lease it to a few men, on the condition that the company was to have 10 per cent, of the gross proceeds. Under that lease the company had received about \$250 only. The shareholders would also remember, he had no doubt, being told that 150 tons of ore had been sent to Mr. Collom's works to be dressed there. He (the Chairman confessed that he had had a very high opinion of Mr. Collom's works, and that sending the company's ore there would be the salvation of the company. Just before Christmas the directors received the result of thattreatment from Mr. Sawyer, and he regretted to say that the result was most unsatisfactory. The dressing had had no effect whatever on the ores, owing to their peculiarity; and there was little or no good got by the experiment, and the expense of sending the core to the works and charges for the treatment were lost to the company. During the first three months of this year the directors had received periodical letters from Mr. Sawyer, in one of which he had agreed to close up his agency, and merely to look after the general affairs of the company. They had also received one or two letters from Mr. Ramage. But, on March 28, the directors wore a very long letter to Mr. Sawyer, asking him the advisibility of resuming mining operations, and also ato whether there was any probability of a market for the cores there. On May 11 an answer to

smelting lead ores in this vicinity, I would by all means advise the company to commence work at once."

The CHAIRMAN then said that all the rest of the letter speaks of what he would do, and finished by saying that if the directors decided not to commence work on the mine at present, but to shut it up, he could lease the mine for one or two years, the lessees giving the company 10 per cent. of the gross proceeds, and that they would employ men to work it. The present leans was merely a verbal one, as Mr. Sawyer did not know whether the arrangement would be considered a satisfactory one by the shareholders. What work the lesses have done had not been done so well as it might be, but the mine was not in a bad condition. Mr. Sawyer then advised that the mine should be allowed to lie idle, rather than that it should be leased to persons over whom the directors would have little or no control. Before answering that letter the directors unanimously came to the conclusion that the shareholders should be called together and consulted with as to what really should be done with the mine. He (the Chairman) could only say that Mr. Sawyer had always been found most straightforward and trustworthy since he had been three, and he did not think they could follow anyone's advice better than his; but if any shareholder had any suggestions to make to the directors they would be most happy to listen to them.

Mr. CLUEUS. Have you any halance in hand now?—The CHAIRMAN. We have

shareholder had any suggestions to make to the directors they would be most happy to listen to them.

Mr. COLVIN: Have you any balance in hand now?—The CHAIRMAN; We have very little: I think about 250.

Mr. COLVIN: Who pays Mr. Sawyer now?—The CHAIRMAN: We have closed our agency with him. He is merely looking after the mine, and after the 30th of this month we shall have no expense. Since convening the meeting we have had two letters from Mr. Sawyer, in one of which he says that the saits instituted by Messrs, Richardson and McCree—which, I dare say, you recollect I spoke about at the last meeting—have not been called in at the last Court, and the Court would rise in a few days—so I think there is an end to these matters. He also stated that he had received an offer for the ore from a Mr. Bertoline.

A SHARHOLDER asked if Mr. McCree was out at the property now?—The CHAIRMAN replied that he did not know where Mr. McCree was at all. He did not believe he was anywhere near there.

The CHAIRMAN, continuing, said there was also a rather important letter from Mr. Ramage, which it would be well that the shareholders should hear, in which he states that he had sent over the samples of ore which were now exhibited. The SEGERTARY then read a letter, dated Jan. 17, from Mr. Ramage, which can be seen at the company's offices.

offices.

would add to that letter that samples of these specimens

he did not know how many thousand miles from a port—the charges were sobsey that it would not pay the company to export ores to this country, and there was which would treat the company's ores he thought it would not pay the company or ore not market for it there. Until some smelting or concentration works were was which would treat the company's ores he thought it would be defrector; and so work of the company's ores he thought it would be better to leave market for by ores, and, therefore, he was of opinion that it would be better to leave market for they are, and do nothing; and it was this course which the directors recommended they are, and do nothing; and it was this course which the directors recommended smelting-works, he had no doubt the company would be a successful one. There exists they are, and do nothing; and it was this course which the result of Colom's pre-was sent; but, on very good authority, the directors were informed admit a very amount to send, as it would not feed the machine more than once at the same property of the company. It is said that too larger quantity much larger quantity should have been sent, and that 150 tons was prefet the machine more than once at the same from the mine, and hearing the opinions of one and another. At this dispussed to know what to do, and for the present he thought the best thing would be to do nothing.

Mr. Bradley asked if the mine was perfectly unsaleable now?—Capt. Rem thought, after the result of this money having been spent with or same position, that it would be difficult to find a purchaser until some good concentrating process was that there were any amount of mines in the district in the same position, that it would be difficult to find a purchaser until some good concentrating process was mine as well as a lead mine.—Capt. Keir said it was a silver mine, as it appears to be a lead mine?—Capt. Keir said it was a silver mine, as it appears to be a lead mine?—Capt. Keir said it was a silver mine, as it appears to be a lead mine?—Capt. Keir said i

atituted against the company of Sawyer's salary out of that sum.

Mr. Colvin supported the recommendation of the directors, and a general openion was expressed in favour of it.

The Chairman stated that the shareholders would be called together, as usul in November for the ordinary meeting, and in the meanwhile the directors would carry out the wishes of the shareholders, and investigate everything that was going on.—The meeting then concluded.

#### WEST TANKERVILLE MINING COMPANY.

An extraordinary general meeting of shareholders was held at the offices, Austinfriars, on Tuesday, for the purpose of considering and, if thought advisable, of passing the following special resolution:—
"That in the event of the divisible profits of the company in any year or year being insufficient for the payment of the preferential dividend of 15 per cent. per firmed on May 5, 1874, the profits of any succeeding year or years shall be applicable to the payment of the arrears of dividend of any preceding year or years."

Mr. J. J. Pyne in the chair.

The LONDON MANGER read the notice convening the results.

when the payment of the arrears of dividend of any preceding year or year."

Mr. J. J. Pyne in the chair.

The London Manager read the notice convening the meeting. The directors explained that, being desirous to meet the views of the shareholders generally, they have, owing to representations received from some of the large holders, decided to recommend that the 15 per cent. preference dividend shalls cumulative from the date of issue of the preference shares, payable out of profit. At present the directors and nearly all the large shareholders have applied for the proportion of the preference shares, and more than one-half have been subscribed for; and the directors have reason to believe that, if this course is curied out, proportion of the preference shares, and more than one-half have been subscribed for; and the directors have reason to believe that, if this course is curied out, proportion of the preference will be taken, which would be of great advantage to all concerned. Of course, the members of the company who have already applied for shares will participate in the proposed amended terms, if adopted, and it is bought they will be induced to increase their interests.

The CHAIRMAN said that since he last addressed the shareholders 1595 of the new shares had been allotted, and 200 more had been taken, with this reservation—that, in the one case, 2000 shares should be taken up; and, in the other case, that the resolution embodied in the notice convening should be passed. But the main object the directors had in view in proposing this resolution was that the whole of the shares might be applied for. The directors were most desirous the whole should be taken up, for when it was determined to recommend an increase of capital it was decided not to ask for more than sufficient to carry on the work efficiently. Several shareholders had been in communication with the directors, and their desire was that the dividends should be cumulative. The and their desire was that the dividends should be cumulative. The directors had taken the matter into consideration, and now sub-mitted the resolution for the adoption of the meeting. The effect would obviously be to make these new shares more desirable. Upon the shares already allotted instructions have been forwarded to Capt. Waters to push down the shaft with all possible speed-a

to Capt. Waters to push down the shaft with all possible speed-apoint of vital importance in the successful opening out of the mile, and Capt. Waters had made a contract to sink the shaft to the & He then proposed the resolution embraced in the notice convening the meeting. — Mr. HILL seconded the proposition.

Mr. Muccuison said the holders of the preference shares had the impetual option of converting them into ordinary shares. Supposing the mine turned eath shareholder who had just visited the mine informed him (Mr. Mucchison) that the lode in Roman Gravels, close up to West Tankerville boundary, is now worth more than 7 tons of ore per fathorm. — The resolution was put and carried unanimously. A vote of thanks to the Chairman closed the proceedings.

#### NEW PEMBROKE MINING COMPANY.

At a general meeting of adventurers, held at the account-house, on

At a general meeting of adventurers, held at the account-house, on June 9 (Mr. R. T. HEAD in the chair), the accounts for 16 weeks to March 28, showed a debit balance of 1115.4.4s, 9d. The reports the agents was adopted, with the exception of that part referring to the western portion of the mine; the further working of the western, or Edgambe's, part of the New Penbroke Mine is to be discontinued, and the pitwork and materials sold, unless such western portion of the mine can be sold as a going coosen within a month from this time on terms more advantageous than the taking up and selling the pitwork and materials; and Dr. Treffry, Mr. West, Mr. Polkinghorne, and Mr. Remfry were appointed a committee to negociate and arrange with any person for selling it, with rull powers to act. A call of 2s, per share was made; and the best thanks of the meeting be tendered to Mr. Jonathan Rashleigh for his liberality, on the application of the company, in suspending the dues and minimum rent until he is satisfied that the returns are such as to justify a resumption. The following report was read to the meeting:—

June 9.—We have much pleasure in reporting to you on the present occasion, inasmuch as since the last general meeting of shareholders, held on February II last, we have had a good improvement in copper in the eastern part of the mine, and it will also be observed from our present report that our prospects are much more encouraging for a good improvement in thin at the 110, which is our present bottom level. The sinking of the engine-shafe below the 110 fm. level is again being forced on as fast as possible by six men and three wages me man and the composed of the shaft about 30 futhorns, and for the whole of that driving he lode has been very small and unproductive, but not being satisfied that we had the main part of the lode, we considered it advisable to put up a rise from the back of the level was gone down north of the rise, and we, therefore, cut into the lode from the rise about 5 fathoms below the 100 fm. l are worth 32/. In the stope in the back of 90 fm, level, east of the win is 7 ft. wide, worth 25/. per fm. In the stope further east the lode is 6 worth 10/. per fathom. In the stope in the back of the 60 fm, level, o lode, the lode is 4 feet wide, and worth 10/. per fathom. The lod stoping the lode throughout the mine is 2/. 10/s. per fathom. The lod end, driving east of the shaft, is about 2 ft. wide, but still unproductive. In the lode is not show about under the winze sinking below the 75 fm. being forced on as fast as possible by six men, and hope soon to reach teopper gone down below the 75. The lode in the winze sinking below level, east of the engine-shaft, is still further improved since our last port, and is now 6 ft. wide, worth full 100/. per fathom, and presentin spects for its continuance.

The as tho the ve mittee because

driven east of the cross-cut 9 fms only, where the lode is small and unproductive, where the lode is small and unproductive, we have also eleared out the 131 fm, level, west of the shaft, on the south or red We have also eleared out the 131 fm, level, west of the shaft, on the south or red lode, which has bast peopre, has intersected the south or red lode, and beyond this referred to in our later peopre, has intersected the south or red lode, and beyond this referred to in our later away the lode has been disordered, and poor for mineral. To the intersection westward the lode has been disordered, and for the lode has been taken away taken away for 10 fms, and west of the cross-cut, we also find the lode has been taken away to least of the shaft we are unable to say, as that level is not yet cleared out. We have resumed the driving of the end on this lode, and have driven west about We have resumed the driving of the end on this lode, and have driven west about We have resumed the driving of the end on this lode, and have driven west about two have resumed the driving to the paper to be formed. We would fms, through a lode from 2 to 3 ft, wide, but still poor for mineral. We would fms, through a lode from 2 to 3 ft, wide, but still poor for mineral. We would fms, through a lode from 2 to 3 ft, wide, but still poor for mineral. We would fms, through a lode from 2 to 3 ft, with a lode from 1 ft fms, more to fork and clear in order remined to the three the lotton of Edgeumbe's shaft, and from the apparent length of provide lode taken away from the 131 fm, level we consider there is sufficient inductive lode taken away from the 131 fm, level we consider there is sufficient inductive lode taken away from the 131 fm, level we consider here is sufficient inductive lode taken away from the 131 fm, level we consider for a higher price, thus at 571 los, leaving about 40 tons of tin in stock or a higher price, thus at 571 los, per ton for the mate to be worth 284, and calculating the present price of 571, 10s, per ton for

#### CWM ELAN MINING COMPANY.

CWM ELAN MINING COMPANY.

A general meeting of shareholders was held at London Tavern, Bishopsgate, on Tuesday,—Mr. CHARLES ELEY in the chair. The Secretary read the notice convening the meeting. The Secretary read the notice convening the meeting. The Secretary read the motice convening the meeting. The Secretary read that most of the shareholders were aware of The Charlman said that most of the shareholders were aware of The Charlman said that most of the shareholders were aware of The Charlman said that most of the shareholders were aware of the mine and the directors were satisfied that any additional expenditure and the directors were satisfied that any additional expenditure would be money expended with every encouragement for its obtainwould be money expended with every encouragement for its obtains ago good return. He need only call attention to Capt. Eddy's lasting a good return. He need only call attention to Capt. Eddy's lasting a good return. He need only call attention to Capt. Eddy's lasting a good return. He need only call attention to Capt. Eddy's lasting a good return. He need only call attention to Capt. Eddy's lasting a good return. He need only call attention to Capt. Eddy's lasting a good return. He need only call attention to Capt. Eddy's lasting a good return. He need only call attention to Capt. Eddy's lasting a good return. He need to be a capt. The mine, and that the additional capital, and they would now ask the shareholders to pass additional capital, and they would now ask the shareholders to pass additional capital which the board proposed to take. The board theory may be the company, which preference was to be at the discretion of the board, but he they would be entired to be repaid first out of the of winding up the preference shares, and the surplus would be divided. In case would be relied to the a like dividend would be relied to the relie

tion was then put to the meeting, and unanimously carried, and the confirming the resolution was fixed for July 2. The proceedings then

#### GREAT WHEAL VOR UNITED MINING COMPANY.

GREAT WHEAL VOR UNITED MINING COMPANY.

The quarterly general meeting of shareholders was held at the offices, Gresham House, on Wednesday,

Mr. J. O. Hanson in the chair.

Mr. J. J. Truran (the secretary) read the notice convening the meeting, and the minutes of the last were confirmed.

The report of the committee of management was read, as follows:—
Since the last quarterly meeting of the adventurers, held on March 25, the committee, in accordance with the resolutions therein passed, to carry out the views of the shareholders, offered the machinery and materials to Mr. Trelawny (the lord), at a valuation, but as he declined to take them, their undivided attention has been given to having them drawn to surface, with a view of turning them into money, and thus obtaining capital necessary for the contemplated operations in the western ground. This, happily, has been accomplished through the careful superintendence of the agents without the occurrence of a single accident, and which, considering the size and heavy weight of some of the pieces, is a subject for congratulation. An experienced auctioner has been entrusted with the management of a public sale, and which will probably take place not later than July 7. In this way it is believed much better prices will be realised than would be by private contract. The committee have the pleasure to report that having received an offer of 2000/. for the 8-in. engine, and believing this to be a fair offer, they accepted the same, and the amount will be brought into the accounts rendered this day. They have also to report that, with the exception of a comparatively small amount, all the cults have been received, and the liabilities discharged. As a gards mining operations, nothing will be done until the sale of materials takes place to put the company in possession of funds, but when this is effected the committee will take care that the epening out the western ground, as mentioned in the last report, is conducted with economy and vigour. In the meanwhile all persons, b

pance received						
On account of calls—10th				. 8	15	0
					13	10
buildings sold, &c. at the minor				94		1
					13	ź
						4
Tin sold, May 7	*******			193		1
						_
And paid—				£2651	4	1
Balance as above to April 25	£ ERE	1	5			
Sandries, postage, discount, &c.	7012	7	8	1804	14	-
			0-	1004		
Balance in hand				£ 846	10	1
The actual account of the state						-
LIABILITIES—Owing to merchants.				£2202	16	4
Labour pay to May 23			******	441	5	-
Lord's dues to March 30	91	18	-			
Salaries, &c., three months	95		1			
three months		****	******	20	10	,
Asserte Co.h Total				£2921	12	5
casa oalance in hand	P GAG	10	1			
			9			
		0	8			
	410	30	0			
Return of income tax	51	11	0=	2715	11	
MOUNT WA	91	3 1	v=	#110	11	

The report of the agent was read, as follows:

£ 206 1 2

ince against the min

But they calculated upon realising for the engines, pitwork, &c., which would no longer be required, about 4000k—an ample capital to develope the western ground, as recommended by their own agents and other experienced mining authorities who were consulted upon the subject. He did not know that he need detain them with any further statement, because the report of the committee and that of the agents cave every information that was possible but at the of the agents gave every information that was possible, but at the same time if there was any point which required further elucidation he should be glad to supply it. He might add that the materials would be sold preliminary to the commencement of the opening out of the western ground; and he hoped that at the next meeting the committee would be able to announce that something had been done. In the meanting it afforded him great satisfaction to he the committee would be able to announce that something had been done. In the meantime it afforded him great satisfaction to be able to state that the mine was not in debt, but in a thoroughly solvent and sound position. The machinery and pitwork were calculated to realise 9000%; they were going to retain 3000% worth for working the new ground, and of the remaining 5000% worth one engine had already been sold for 2000%, which the committee thought satisfactory. An auction sale had been arranged to take place in July by one of the most experienced auctioneers in Cornwall—Mr. Cade—and they hoped and believed they would have a satisfactory sale. When the sale had taken place, and the money was in hand, probably some members of the committee—he hoped to go down himself—would put the work in progress in the most economical and best manner possible. He then proposed that the accounts be passed and allowed, and with the reports entered on the minutes, which was put and carried unanimously.

The committee of management were re-elected with the usual remuneration, and thanks voted for past services.

Mr. W. MOATES was re-appointed auditor.

A resolution was passed authorising the committee to take the

A resolution was passed authorising the committee to take the ecessary legal measures to recover the arrears of call.

A vote of thanks was passed to the Chairman and committee.

The CHAIRMAN, in acknowledgment, thanked the shareholders for

this renewed mark of confidence .- The proceedings then terminated.

#### DUNRAVEN-ADARE COAL AND IRON COMPANY.

An extraordinary general meeting was held at the offices, Queen Victoria-street, on Wednesday,
Capt. James Rennie, C.B., in the chair.

Capt. JAMES RENNIE, C.B., in the chair.

It should be stated that at a meeting, held on May 21, a resolution was passed authorising an increase of the company's capital by the sum of 10,000%, making the amount 70,000%. On June 1 another meeting was held, when it was resolved—"That the directors be and they are hereby authorised without any further sanction from the company, except the confirmation of this resolution, to issue as preference shares such number as the directors may think proper of the 1000 unissued shares of the company, with the privilege that the holders of such preference shares shall be entitled to a preferential dividend of 10 per cent. per annum upon the amount paid up thereon, such preferential dividend to be payable out of the net profits or annual income of the company, for each sparate year before the holders of ordinary shares, shall be entitled to receive or participate in any profits or income of the company, but without recourse to the profits or income of any subsequent year. And that the directors be, and they are hereby, authorised to issue any such shares as aforesaid, with the further privilege that the holders thereof shall be entitled to share equally with the holders of ordinary shares in the surplus profits or income of the company, for any year which shall remain after payment to the holders of such ordinary shares of a dividend on their shares, at the same rate as the preferential dividend."

Upon the confirmation of the above resolution being put to the meeting, it was

ordinary shares of a dividend on their shares, at the same rate as the preferenced dividend.

Upon the confirmation of the above resolution being put to the meeting, it was carried.

Mr. Robinson (Shelford and Robinson) replied at some length to the statements made by the Chairman at the previous meeting, in which he called into question the correctness of some material points in the original report of Messrs. Shelford and Robinson, upon which the company acquired the property. He complained that he had been unfairly treated by the Chairman having made these-statements, without giving his (Mr. Robinson's) firm any intimation he was about to make them, and therefore prevented an opportunity of replying. The substance of the report circulated by Mr. Huxham was that the amount of coal under the property was not what was estimated in the original report. The only way to explain the discrepancy was in the difference of acreage. In the plan as originally laid before his firm the acreage was \$68, and it struck him that Mr. Huxham, in his report. Had fallen into the mistake of estimating the smaller number of acres. He then proceeded to reply to the remaining attenments of the Chairman.

The CHAIRMAN sked Mr. Robinson if he were to understand him to say that the statements in the original report were based upon these results, as shown in the books by Mr. Grogory, and that they showed there was an output making a net profit?—Mr. Robinson: Clearly so. He said most unhesitatingly that he examined the books himself; he believed the statements there set forth, because he could not believe the books had been falsified.

Colonel Yolland's Then you absolve the directors from duplicity?

Mr. Robinson: Do not imagine for one moment I am throwing a doubt upon the directors.

e directors.

The CHAIRMAX said it was not his wish to throw disparagement upon any man, it was his duty when in the chair to place all facts before the shareholders, and inform them of everything within his knowledge. He would ask Messrs. elford and Robinson to whom they applied for data upon which they wrote is report?

Mr. Robinson said he had already mentioned that it was from books, dozu-

Mr. ROBINSON and he had already mentioned that it was from books, documents, and papers on the colliery.

The Chairman said all he could now add was that Mr. Robinson had had a circular convening the meeting at which the statements were made of which he now complained. He (the Chairman) did not know he would be called upon to occupy the chair, but when in that position he did not lose any opportunity of informing the shareholders of the position of the colliery. It was clear that both reports were based on estimation, and it was remarkable that the estimate from their manager differed as much from Mr. Huxham's as Mr. Huxham's did from Messrs. Shelford and Robinson's, experienced where the content of the colliery of the content of the colliery of the content of the colliery of the collier

onsert on examation, and it was remarkable that the estimate from their manager differed as much from Mr. Huxham's as Mr. Huxham's did from Messrs. Shelford and Robinson's sport because it had not been borne out by results. He did not blame the directors, because they were not expected to be practical men. Mr. Huxham, living in the district, must know better about the collieries than any London firm. It was clear that Messrs. Shelford and Robinson had taken their data from books and what had been told them. The directors had had a great deal of blame in this matter which they did not deserve, but at the same time he should like to see some gentlemen on the board who held a large interest in the company.

Col. Yolland said they were losing time in discussing matters which could lead to no good result. The directors should communicate what had been the success of the appeal to the shareholders for additional capital, and also the present financial position of the company.

Col. GAWLER said, from a careful consideration of the information received at the three meetings, he had come to the conclusion that the whole difficulties of the company were due solely to the incompetency of the late management.

The CHAIRMAN mentioned that 690 of the 6000 shares had been applied for.

Mr. HESALTINE explained that the liabilities amounted to 2473l.; the board had given acceptances for 188d.; the accounts due up to June 30 were now estimated at 1000l., and 34d. overdue to the bank. The total liabilities were 5700l. Mr. Solway estimated to complete the works for 2400l.

Lieut. Col. William Yolland, Col. John Cox Gawler, and Mr. Joseph Kineaid were elected directors.

A vote of thanks to the meeting closed the proceedings.

#### ECLIPSE GOLD MINING COMPANY. The statutory meeting of shareholders was held at the London

The statutory meeting of shareholders was held at the London Tavern, on Thursday,—Mr. A. W. Casswell in the chair.

Mr. Bluett (the secretary) read the notice convening the meeting. The Chairman said that the present was the statutory meeting called in pursuance of the Companies Act, which provided that the shareholders should be called together within four months of registration, and therefore the directors had neither report nor balance-sheet to submit, nor had they much information to communicate. They were aware that when the present company was formed Mr. Willett engaged to go out to California. Mr. Willett arrived there on April 4, and advices had been received from him. He fully confirmed all the reports placed before the shareholders by Mr. Endey, but the directors were not yet in a position to place any details. Mr. Willett was on his way home, and would be here in about a week's time, when, if necessary, a special meeting would be convened to communicate the information obtained.

A vote of thanks to the Chairman and directors closed the proceedings.

Balance against the mine

E 206 1 2
The report of the agent was read, as follows:—

Just 16.—In conformity with the resolutions passed at the last meeting of shareholders, the whole of the materials have been drawn to surface without a single
acident of any kin II, and the auctioner is now engaged extaloguing preparatory to
aske of the surface which we can hold on or shout July 7. With regard to kaying
out our new work for the development of West Metal, we advise to commence in
the last like the well on the companies of the surface work, and the summer is the best time
to do it. We purpose to go on with the following work:—To fix launders from
the green line of launders to Edwards's shaft, so that by the time the water gets
to the said level we all the following work:—To fix launders from
to like the bloading at Edwards's shaft, fix hat-rods from Edwards's to West
like surface to the additived.

The cranging out of this would involve a monthly cost
the additived.

The cranging out of this would involve a monthly cost
we shall be pumping war, after which our cost will increase, but the returns of
the surface there, and cut down the West Metal shaft from
the well more than make up for the increased cost.—S. HARRIS, J. JANES.

The CTARMAN said that those present at the last meeting, as well
as those who had perused the report of the details, were aware of
the very important decision then come to. Since then the committee were glad to think that the decision was a very wise one,
because had the mine gone on as heretofore, instead of being in its
present comparatively favourable position, with a small debit of only
200, the committee would no doubt have been compelled to recomments of the company had been liquidated, with the exception of
the 2004. They would retain machinery, pumps, &c., sufficient to
fally develope the western ground; this was valued at about 30004.

The amount of profit on the working on the Morro Velho Mine from April 1, 1873, to March 31, 1874—the gold produce being credited to April 8—being carried to the profit and loss account, leaves that account in credit 556%. 118, 331, which sum the directors recommend being carried forward.

The new machinery erected for pumping and brailing at the new shafts, and the new surface arrangements for halling the ore from the shaft month to the spalling theors, have been found to work very effectively, and are capable of dealing with much larger quantities of water and mineral than they have at present to raise. Operations were continued on a small scale at the Gaia Mine during the first eight months of the year, but as these resulted in a monthly loss, the work was continued more with a view to give employment to the people until work could be found for them at Morro Velho than in the hope of profitable results, as it became apparent as the lode became more developed that this mine could not be made remunerative. On the Cachocira lode being reached, the whole force was therefore withdrawn from the Gaia Mine, and all operations on the Fernam Pase Estate were suspended. The reports of the several officers in charge of the respective departments, with the superintendent is general remarks, give very fully, in detail, an account of the work of the year. The way in which that work has been performed is borne testimony to by the superintendent in the following words:—"The general and hearty co-operation I have had from the heads of these departments, and from our small hody of officers, has not been more sensibly felt by me at any previous period in Morro Velho Mine than during the past year. The spirit that has prevailed, and the cheerful and zealous way in which they have performed their several duties, have been exceedingly pleasing, encouraging, and gratifying." The energy and ability with which they have been directed, guided, and encouraged in the performance of their duties by the superintendent has been acknowledge

#### SWEETLAND CREEK GOLD MINES.

SWEETLAND CREEK GOLD MINES.

The annual meeting will be held on June 25, when the directors will submit to the proprietors the fourth annual report of the operations of the company. The period under review extends from April 29, 1873, to April 21, 1874. During 442 months of this time productive operations were entirely suspended, owing to the connections of the new ditch company, from which the mines are now deriving their water supply, not having been completed. The directors believe that any suspension of operations from this cause will not again occur. The accounts, duly audited, show that a gross produce of 6398-18 oc. of gold, realising 25,615. 2s. 7d. has been obtained, at a cost of 12,571. 7s. 1d., leaving a profit of 13,043. [1s. 6d.—a profit which would have been very materially increased had no delay taken piace in productive operations. Four dividends, aggregating 13,5-00., have been prid during the past year. The balance at the credit of profit and loss account is 3197. 9s. 5d. Adding to this the profit of 28000. advised by telegram on the 13th inst., the available balance is 5907. 3s. 5. Out of this the directors propose to pay the 14th dividend of 4s. per share, free of income tax, to carry 5 per cent. on the dividends paid during the past year to the reserve fund, and 14 write off 1500. from the cost of the new tunnel. This will absorb 5175., beaving 822.0 s. 5d. to be carried forward.

From the superintendent's report for the year other reserve fund, and 14 write off 1500. from the does not be able to call attention to the ending paragraph of the company's ground which is known to be rich, is likely to prove of much greater extent than had been hitherto supposed to be the case: and it also affords the directors much pleasure to be able to call attention to the ending paragraph of the same report, in which Mr. Maelean states that, "considering that the dead work of the creek is comparatively at an end, and that the tunnel—to be driven only from one face—will lesses materially the profites for the

#### COLORADO TERRIBLE LODE MINING COMPANY.

COLORADO TERRIBLE LODE MINING COMPANY.

The annual meeting will be held on June 29, when the directors will lay before the shareholders their report and balance sheet for the twelve months ending March 31. The operations of the company for the year exhibit a gross profit of 9524. 4s. 2d., which, being debited with interest paid 1344. 7s. 6d., leaves a net profit of 8120. 6s. 8d., a result which compares favourably with the previous year. The stock of ore and other assets, valued in the accounts of 1872-3 at 12,044. 18s. 2d., and seen realised, and the debts of the company, amounting at the same period to 12,4820. 8s. 3d., have been paid. On March 31 the stock of ore consisted of two parcels, since sold in Liverpool, valued at 17341. Ils. 8d., and second and third class ore and third class rock, valued at 62590. 18s. 10d.; total, 70911. 6s. 6d. Although unexpected delay has arisen in bringing the new dressing works into operation, the agent expects that he will be able to dress the large stock of 2006 tons of ore during the season, so that in the course of the current year the whole of its value will become available. As stated in last week's Journal, already sufficient has been sold to enable the directors to recommend the payment of advicted of 1s. 6d. per share, and they feel justified in promising the payment of advicted of 1s dole per share, and they feel justified in promising the payment of advicted of 1s dole, per share, and they feel justified in promising the payment of advicted of 1s dole, per share, and they feel justified in promising the payment of advicted of 1s dole, per share, and they feel justified in promising the payment of advicted of 1s dole, per share, and they feel justified in promising the payment of advicted of 1s dole, per share, and they feel justified and process of the share holders as the price of silver directors intend to have nearly all the cleaned mineral forwarded to England for sale, as that affords the most satisfactory market, not withstanding the cost of transport. In an

WEST MILWR .- At the directors' meeting on Monday it was determined to resume operations—a few gentlemen having taken the matter in hand, with a view to resuscitate the company. By these the whole of the remaining vendors shares have been purchased, and they are offered to the shareholders at 7s. 6d. per II. fully-paid share, provided the offer be accepted in a month. Two-thirds of the fs. 6d. is to be invested in fresh shares at par, so that 250.4 will be provided. Mr. J. J. Ward has been elected a director, in place of Sir L. P. H. Fleetwood.

vided. Mr. J. J. Ward has been elected a director, in place of Sir L. P. H. Fleetwood. THE SCOTTISH AUSTRALIAN INVESTMENT COMPANY.—A special general meeting of this company was held at the London Tavern, June 17 (Mr. Adolphus William Young, Mr., in the chair), to confirm resolutions passed at the meeting held on May 16. The Chairman stated that this meeting was convened for the 16th inst., but as there was not the requisite quorum of proprietors then present it had been adjourned until to-day. They now had a quorum, and he begged to move, "That the following resolutions which were unanimously passed at the special general meeting of the company, held on the lefth day of May, 1874, be and hereby are confirmed." The resolutions were then read seriatim by Mr. Grainger, the secretary, and the motion having been seconded by Mr. F. P. Ward, was put to the meeting and carried unanimously.

OHIO (Isla of Man).—At a special meeting held at Douglas, or

was put to the meeting and carried unanimously.

OH10 (Isle of Man).—At a special meeting held at Douglas, on June 13 (Mr. A. W. Adams in the chair, the question of winding up the company was considered. The Chairman said it was mere waste of time and money to go on as they were going. These still having confidence could buy the concern, and float it again. Mr. Quine said it was his opinion that they should drive under the river, and get a person to contract to drive 13 or 15 fathoms. He thought something would turn up before that drive was accomplished. He was down at the mine six weeks ago, and the lode they had got at present was the most promising one he had perceived in the mine since it was begun. The Chairman said there was no doubt that many a good mine had been shut up just when it was going to prove a success. He wished their mine was one of those case; but the thought it was scarcely one of them. The directors were in their hands, and it was for the shareholders to say what they were to do, and they would discharge their duty to the best of their ability. He believed it was the unanimous desire of the directors to have the company wound-up. The necessary resolution was carried, Messrs.)

Moore and T. Bawden were appointed liquidators, and 5 per cent. on moneys realised voted as their remuneration.

CAMP FLOYD-DISCOVERY OF A RICH QUICKSILVER LEDGE,-CAMP FLOYD—DISCOVERY OF A RICH QUICKSILVER LENGE.—We have mentioned the discovery of a valuable cinnabar ledge by Mr. Thomas Bennett in the Camp Floyd district; the ledge has been stripped a distance of 85 ft., and shows a vein of rich ore 7 ft. wide. Tests have been made, which rangateon 15 to 75 per cent.; the average quality is estimated at 25 per cent. A previous discovery of this valuable deposit has been made across the canyon in the Jenny Lind Mine, but this bore no relation to the present ledge in richness, its yield not exceeding one and a fraction per cent. This discovery is likely to prove of immense value, and information has been dispatched to several parties in California, some of whom are expected shortly to take an interest in the mine. Mr. D. C. Butterfield, who has bonded the mine, has a quantity of rich specimens furnished him by Mr. Bennett.—Salt Lake Davy Tribane.

M. PIERRE VIGOUROUX, of Paris, civil engineer, has patented some improvements in the manufacture of certain bituminous materials. This composition is prepared by mixing together and heating about 45 parts of coal tar, 50 parts of Nile alluvium, or any analogous matter, and 5 parts of hydrochloric acid.

#### NEW FINANCIAL PROJECT-THE ROCKY MOUNTAIN MINERAL CONCENTRATION COMPANY.

An enterprise of great local importance has recently been incor porated under the laws of Colorado, and from the peculiarity of its constitution is worthy of consideration. The object is to secure a full return of the investment out of ores subscribed by the mine owners for the purpose of procuring the funds for the erection of a concentration establishment. Thus the capital subscribed is paid back out of the first ore treated (that given by the mine owners) yet the subscribers retain their shares nevertheless, and participate in future profits. Apart from the importance of the enterprise for the miners of Colorado, the features of its financial arrangement are so novel that they will interest investors and financial operators generally. Hitherto the entire produce of fine metal in the Territory of Colorado (\$5,000,000 in 1873) has been obtained either from "firstclass ore," which is ore rich enough in itself to permit of its being shipped to Chicago, Illinois; Newark, New Jersey; Swansea, South Wales; or Freiberg, Germany; or from such ores as can be treated by direct amalgamation. All over the Territory, with one or two exceptions, the "second-class ore," which includes all carrying less than 40 ozs, of silver per ton of crude ore, and "refractory ore," or that which cannot be treated by direct amalgamation, are thrown

that which cannot be treated by direct amalgamation, are thrown over the dump and totally neglected.

It is upon these facts that the financial project in question is based. The Rocky Mountain Mueral Concentration Company proposes to erect works for concentration, smelting, and refining in those districts in which the mine owners subscribe sufficient ore, worth above \$15 per ton to pay for the prection of the works reworth above \$15 per ton, to pay for the erection of the works required to turn the low-grade ores into reduced ores, or bullion high enough in assay value to allow transportation to market. When the cash invested in the works has been completely returned by the subscribed ore being turned into cash, the cash investors remain the proprietors of one-half of the shares, the full fair value of their investment, and the mine owners remain proprietors of the other half, thus uniting their interests, so as to guarantee the future profitable operation, promising about 50 per cent. per annum, and without direct surprise rich in the state of the state of

operation, promising about 50 per cent. per annum, and without direct mining risk.

To carry out these objects the bye-laws of the company provide that the certificate of stock will be numbered and registered as they are issued, signed by the president and countersigned by the secretary. Transfers of stock will only be made on the books of the company, and the possession of stock will not be regarded as ownership unless it appears upon the stock books of the company that said certificate was issued or duly transferred to the holder. The capital stock is divided into two classes, consisting of \$50,000 each; one class is cash stock, and the other premium stock. Subscribers to cash stock are entitled on paying up for the same to an equal amount of premium stock gratis. No greater amount of premium stock can issue than there is cash stock subscribed and paid. Premium stock may be subscribed to by miners owning ores situated in the county where the company's works are located, and may be paid for in ores representing a cash value of not less than \$15 a ton, on such calls and conditions as may be prescribed by the trustees. Ore so paid in will be converted into cash, and the same paid over to holders of cash stock on the order of subscription in payment at par of the of eash stock on the order of subscription in payment at par of the premium stock, which will immediately be assigned by the holders and transferred to the subscribers on the books of the company. All stock, whether cash or premium, will share equally in the government of the corporation, and participate in its dividends. Works will not be constructed by the company, and the money paid in on

will not be constructed by the company, and the money paid in on cash stock is to be returned to the subscribers unless premium stock equal in amount to the eash stock subscribed for and paid shall have been sold to miners capable of supplying to the works in the aggregate at least 100 tons of ore per day of the value stated.

The company has its offices in Denver City, Colorado, and among the trustees are Prof. Schirmer, superintendent of the United States Mint in that city; Mr. F. D. Hager, of Hager, Sons, and Co., bankers, Denver; and Mr. J. M. Paul, the president of the Miners' Association of Colorado, and who, it is expected, will be the next Governor of the Territory; whilst the secretaryship and management of the techthe Territory; whilst the secretaryship and management of the technical department will be in the hands of Mr. Francis Cazin, M.E., C.E., whose inventions inthe mineral concentration line are by a large experience and special knowledge. The progress of the company will be carefully recorded.

#### NOVA SCOTIAN GOLD DEPOSITS-No. IV.

The district of WAVERLEY, from its proximity to Halifax, the metropolis of Nova Scotia, as well as from the fact that a single mine there produced in one month a bar of 1200 ozs, in weight, has been looked upon abroad as the representative district of the Province, although its gross yield has been exceeded by Sherbrooke, where the works have been conducted more perseveringly and systematically. We take, however, the following description of the district from an elaborate report prepared by Prof. H. Y. Hind, in 1868, under instructions from the Hon. ROBERT ROBERTSON, the then Commissions of Public Works and Mines:—

Bioner of Public Works and Mines:—
"Geographical Features.—Waverley Gold District is 14 miles
from Halifax, 11 of which are by rail to Rocky Lake Station, and 3 from the station to the village, situated in the centre of the district. The western boundary of the areas shown on the plan is, however, not more than 14 mile from Windsor Junction Station, 13 miles from Halifax. Two well-marked chains of lakes traverse the district not more than 1½ mile from Windsor Junction Station, 13 miles from Halifax. Two well-marked chains of lakes traverse the district from north to south. These lakes lie on the course of two nearly parallel dislocations, or lines of disturbance, about 5000 ft. apart, and offer a fine illustration of the dependence of geographical outline on geological structure. The westerly chain embraces Thirt Lake, Three Mile Lake, and Fishing Lake, with their connecting streams, in the aggregate 2½ miles long. Their waters flow from north to south, to the vicinity of Fishing Lake, they then strike across the country to Lake William, which, with a large sheet of water, named Lake Thomas, belongs to the eastern chain, whose waters flow from south to north, and ultimately reach the Bay of Fundy by the Shubenacadic River. The eastern shores of Lakes Thomas and William are bold and abrupt, having a mean altitude of 200 ft. above their surface, and when viewed in connection with of 200 ft. above their surface, and when viewed in connection with the low country occupied by the lakes named, at once suggest to the observer a disturbance of considerable magnitude in geological the observer a disturbance of considerable magnitude in geological structure. The district is divided into two portions, called East and West Waverley. East Waverley lies to the east of Lakes William and Thomas: West Waverley to the west of those lakes. No surface within the limits of the district is clevated more than 330 feet above Lake William, or about 380 feet above the sea. The highest point is on the north boundary of East Waverley. The summit in West Waverley is on the outcrop of the Union or Taylor lead, and is 116 feet above Lake William. On a line of section running nearly due east and west along the axis of the anticlinal, in West Waverley, the highest point is 98 feet, while east of Lake Thomas, on the continuation of the same section, the land rises abruptly to 200 feet above the lake. above the lake.

"GEOLOGICAL FEATURES .- In West Waverley there are few rock exposures—coarse drift varying from 3 ft. to 50 ft. in depth, and in great part composed of gravels and clays, enclosing unworn masses of local origin covers the surface. A few boulders of granite, derived from a range some miles to the north, are scattered here and there. In East Waverley rock exposures are numerous, and in general the drift is shallow; it contains comparatively few detrital masses until the summit plateau is attained near and beyond Lake Willis. The strata at Waverley are arranged in the form of an elongated elliptical dome, whose longest axis is from east to west, or more correctly on a course N. 85° E. The first movement which led to the present attitude of the strata was from south to north, by which the beds were thrown into a large anticlinal fold or undulation, one of many parallel and similar undulations which traverse the country. A very feeble conception can now be formed by superficial observation of the original enormous magnitude of these huge waves of rock which ridged the surface of the province. Whether denudation took place as fast as the uplift, or whether the undulations obtained their maximum altitude, partially or wholly undenuded, it is certain that not least then 9000 fit in variest thickness belonging to one rock series. less than 9000 ft. in vertical thickness, belonging to one rock series,

have been removed from the present surface of Waverley gold district. The direction of the crest or axis of this undulation is from east to west, and the force which occasioned it operated sufficiently long to throw it over towards the north, hence on the south side of the anticlinal the dips are much less than on the north side, and at the depth of 400 or 500 ft. the strata on the north side of the anticlinal will have an overturn dip, and a vertical section from north to south would show the beds to have been thrust over in the form of a pot-hook, or letter S. Long subsequently to the operation of the force which occasioned the east and west anticlinal, another povement from west to east produced a low porth and each antimovement from west to east produced a low north and south anti-clinal, whose axis appears to lie near Lake Willis. It is this move-ment which has been the cause of the enormous breaks or dislocations already alluded to as affecting the geographical outline of the country. The result of these anticlinals crossing one another nearly at right angles is seen in the long elliptical dome-shaped form, tilted over to the north, which the strata at Waverley now exhibit."

#### BRITISH ENTERPRISE IN COSTA RICA.

It will be recollected that some time since a company was formed It will be recollected that some time since a company was formed under favourable auspices to acquire a mining property in Costa Rica, represented to be of great value to those offering it for sale in this country, and that the intending purchasers, upon the recommendation of Mr. David Forbes, F.R.S., Dr. Percy, and Messrs. John Taylor and Sons, appointed Mr. W. B. Richardson, a former pupil of the Royal School of Mines, to examine the property. His report appeared too good to be true, but he considered it unjustifiable to tone it down. In course of time, however, doubts arose whether Mr. Richardson had had sufficient practical experience to enable him to estimate safely the quantities of ore which could be raised under given circumstances, and the profits which would result from them. Capt. II. Clemes, of Falmouth, a well-known mining authority, was then II. Clemes, of Falmouth, a well-known mining authority, was then sentout, and his report on the mines was by no means a tisfactory. The quantitity of water was such as to preclude, even with a glass lantern, his ascending some of the rises communicating with the upper galleries; but so far as be could proceed the whole of the levels nearly presented a very contracted and crushed appearance, and at hearly presented a very contracted and trusted appearance, and at their entrance from the surface nearly all the timber has succumbed by decay and pressure to the heavy surrounding decomposing matter. Captain Clemes concluded by expressing his opinion that "the mines did not offer sufficient inducement to merit the attention and outlay asked for them, and in arriving at that conviction he did so from practical observation, however much he was thus obliged to differ from the expressions of those gentlemen who had praviously refrom the expectations of those gentlemen who had previously re-ported on the property." This altogether blighted the hopes of the vendors, who had, moreover, paid Capt. Clemes's fee for the report. Mr. Richardson refused to attempt to refute Capt. Clemes's report, and the result was that the directors concluded that Mr. Richardson had undertaken a duty for which he was not, perhaps, quite competent.

But whilst reporting so very unfavourably upon the Trinidad mines, Capt. Clemes reported very favourably upon some mines he saw on his way to the Trinidad mines, and the vendors proposed to substitute one set of mines for the other. Captain Clemes recommended the purchase of the Sacra Familia property, not only because it was a good thing, but because the terms of purchase are moderate. The terms of purchase were to include an outlay altogether of something like 65,000%, and the profits promised from the outlay are very large. Moreover, the mines are fully developed. Over 7000% has been expended on the machinery, which is ready to work now almost immediately, and the only circumstances under which this property could be obtained at anything like the price at which it is now offered is that it belongs chiefly to a gentleman who is sent over here as the financial envoy of the Costa Rica State, connected with the business of the Costa Rica loan. Under these circumstances, there was an opportunity of acquiring the property upon favourable terms for 65,000%, and it was determined that Captain Clemes's report should be printed, that the shareholders might be able to judge whether the purchase was worth making. This has substitute one set of mines for the other. Captain Clemes Clemes's report should be printed, that the shareholders might be able to judge whether the purchase was worth making. This has now been done, and the directors have succeeded in effecting a contract for the purchase of the Sacra Familia and San Francisco Gold and Silver Mines, situate in the Aguacate Mountains, in Costa Rica, upon terms which they consider to be exceptionally favourable, and which they can without hesitation recommend to the acceptance of the shareholders. The reports of Capt, Henry Clemes and of Mr. Hugo Reck upon the mines in question are highly favourable, and, having regard to the reputation for prudence and caution possessed by the former of these gentlemen, the directors have confidence in adopting and acting upon his recommendations. The directors call attention to the fact that the proprietors of the Sacra Familia Mines evince their own confidence in the property by accepting a small amount of cash in respect of the purchase-money. accepting a small amount of cash in respect of the purchase-money, notwithstanding the large expenditure already made upon the mines, and Mr. Allpress, one of the vendors, will join the board, his long residence in Costa Rica, his intimate acquintance with the language and customs of the country, and the large interest he has in the mines, making his connection with the management an important

The first attempt at mining in Costa Rica in search of gold and silver is said to have been recommenced early in the present century, but owing to the employment of inexperienced people, defective modes of working, and very limited funds, but few of the mining enterprises resulted profitably. Capt. Clemes reports that the Sacra Familia extend about 20.09 yards in length, by 100 yards in width. They are held under a grant from the Government, free of all charges, with the right of cutting all necessary timbers for building and mining purposes, and of transferving or selling the grant. They are situated purposes, and of transferring or selling the grant. They are situated in a high mountainous section, at an elevation of 2840 feet, thickly covered with wood, excepting the clearings around the buildings and It is in the narrow defiles and steep declivities sloping westworks. It is in the narrow defiles and steep declivities sloping westerly that six adits or levels have been driven, and these constitute the mine, which possesses, by its elevated position, great facilities for development in a most economical and expeditious manner, inasmuch as all the drainage can be effected by adits, and the transit of ores from the levels to the reduction works can be accomplished by either wire-rope way or balanced incline.

There are two lodes close to each other in parallel directions about N.E. The principal produce of the most northerly is silver ore, which, from its characteristic of being blended with a greater moiety of the base metals, obtains the name of the Silver Lode. The

moiety of the base metals, obtains the name of the Silver Lode. The more southerly lode produces gold. These lodes not unfrequently unite, resulting in an increase of the base and precious metals. In many places their intersections occur very obliquely, but at others abruptly; in both instances the junctions swell the lodey mass to double its previous dimensions, and often more. Both of these double its previous dimensions, and often more. Both of these lodes contain a very large quantity of profitable ores, and when thoroughly opened out the metalic wealth could be extracted at a very small expense per fathom. Reviewing the spacious and well-defined character of the lodes revealed in the respective levels collectively, there is the most assuring evidence of their containing very large quantities of remunerative ores in gold and silver, and that by further extensions their quantity will; in all probability. that by further extensions their quantity will, in all probability, be

normously increased.

The reduction works consist of a substantially built wood frame house, with stone masonry foundations for the machinery. Contained within this, and covering the whole, are the following:—10 revolving within this, and covering the whole, are the following:—10 revolving head-stamp mill about 7 cwt. per head, 1 Blake's stone-breaker 6 ft. by 12 ft. with revolving horizontal table attached, 2 German shaking tables, 3 jigging machines, 2 conical grinding mills worked by under levelled gear, 1 centrifugal pump, and other minor connections. The whole of these appliances are intended to be propelled by an 18-in. improved turbine-wheel, with 40 metres full of water, computed to represent about 30-horse power. It is affirmed that a full supply of water to drive the enumerated machinery exists during eight months in the year and the remaining four months as efficient. months in the year, and the remaining four months sufficient bout half-power. The cost incurred in the machinery, includfor about half-power. The cost incurred in the machinery, including watercourse and iron piping conducting water to the turbine, a cart-road, and wire transit incline conveying the ores to the mill, has been estimated at 7500*k*, and an expenditure of 16,000*k* was incurred in opening up and developing the mines.

The water supply is very accurately described by Capt. Clemes as

a momentous question, and suggests that the quantity of this element should be most carefully estimated in the dry season, and that if it be practicable with a moderate outlay a reservoir should be made to collect the water during the period of the rains. Second in importance to this is the native labour, which at present is limited, but the staff could be increased to a full complement, he was informed, by the importation of Chinese labourers from Californis and Guatemala. Large numbers of those residing on the eastern slopes of the latter country could be obtained, and being long accustomed to mining pursuits, as well as the climate, their services would be valuable. In addition to the staff of native labourers, a limited staff of European skilled labourers to attend to the most important branches of the mine, and of mechanics to keep the machinery and tools in order, would be indispensible. Of these two questions sufficiency of water is the greater, as he is favourably impressed that, with judicious management, after a time there would be a full supply of labourers from the natives. labourers from the natives.

Capt. Clemes's report is, to a great extent, based upon that of Mr.

Capt. Clemes's report is, to a great extent, based upon that of Mr. Hugo Reck, of Clausthal, made a few years since, and fully referred to in the Mining Journal at the time, and it cannot be doubted that Mr. Reck's report was a very exhaustive one, calculated greatly to facilitate a subsequent inspection, so that it may be considered that Capt. Clemes had an exceptional opportunity for arriving at an accurate conclusion. It will, therefore, be the more gratifying to the shareholders to learn that in closing his report he states that, reviewing all the circumstances connected with these mines, and having regard to the reservations which he has made as to the continuous snooly of water, he has no hesitation in expressing his high onisissupply of water, he has no hesitation in expressing hishigh opinion of their value, and can conscientiously recommend their purchase,

#### FOREIGN MINING AND METALLURGY.

Business in copper has been quiet at Paris, but quotations have been firmly maintained, and have even been tending upwards Chilian in bars, delivered at Havre, has made 821.; ditto ordinary descriptions, 80%; ditto in ingots, 86%; and pure Corocoro minerals 83% per ton. Spanish copper has been quoted at about 82% per ton at Marseilles. Business in copper has been very quiet in Germany although some transactions have been noted for local consumption although some transactions have been noted for local consumption; prices have been uncertain and irregular. A report from M. Edouard Sève, Consul-General of Belgium at Valparaiso, states that the exports of copper from Chili, which stood in 1872 at 1,000,286 quintals, decreased in 1873 to 907,385 quintals. The exports of copper from Bolivia increased, however, to the extent of 1367 quintals last year, as compared with 1872. The exports of Chilian and Bolivian copper to England last year amounted to 856,550 quintals, as compared with 844,601 quintals in 1872. The exports to France declined, however, to 45,627 quintals, as compared with 105,667 quintals in 1872. The Paris tin market has been well maintained. Banca, delivered at Havre or Paris, has made 1084; Straits, 1064; and English, delivered at Havre or Rouen, 1044, per ton. Tin has continued to advance at Rotterdam. Banca has risen from 60 ft. to 62 ft., and even 62 ft. The demand has continued good, and some heavy purchases are anticipated. Some rather important transactions have also taken place in Billiton at 57 fl. to 57½ fl., and at the last dates there were no sellers in Billiton at 57 fl. to 57½ fl., and at the last dates there were no sellers below 58 fl. The German tin markets have been generally well supported. Lead has been hardening at Paris, and a quotation of 21.4. 4s. per ton has been generally accepted. The German lead markets have also ruled firm. Silesian zinc, delivered at Havre, has brought 23.4. 8s. per ton at Paris; other good marks, delivered at Havre or Paris, have made 23.4. per ton. At Marseilles, quotations have not changed to any material extent. Zinc has been well maintained in Germany.

The French iron trade still remains depressed, orders are scarce, prices are to some extent nominal, and the production is restricted.

The French iron trade still remains depressed, orders are scarce, prices are to some extent nominal, and the production is restricted from day to day. The prolonged existence of strikes in England is inducing hopes among the owners of French blast-furnaces of an early improvement in the prices of pig, the quotations for which have, indeed, been sensibly hardening. In the Ardennes iron has ranged between 81.8s. and 81.16s. per ton; in the Meurthe-et-Meelle pig has been dealt in at an average of 31.0s. 101, per ton. It is not without interest in dealing with the French iron trade to note the fact that a tramway 2½ miles in length has been inaugurated at Lille; a system of horse tramway has also been decreed at Versailles. a system of horse tramways has also been decreed at Versailles

Politics have engaged more attention than business at Brussels this week; and although the Brussels Metal Bourse has brought many week; and although the Brussels Metal Bourse has brought many people together, transactions upon it have exhibited some languar. The general feeling appears, however, to point to the commencement of a revival in business, which has been sufficient to maintain prices with firmness. The various Belgian rail ways have been doing more business recently for the Belgian metallurgical interest. Stocks of Luxembourg pig, although reduced, are still reny important; prices remain at 2l. 16s. per ton. Business in pig with England has become almost wil, and the English market is so affected by strikes that it may be said to have ceased to regulate the Belgian iron trade. Authority has been given to M. Marchot to establish a rolling-mill with plates in the Commune of Tilft, in the Valley of the Ourthe; this establishment will be equipped on the Lauth and Deby differential system. The Thy-le-Château Blast-Furnaces and Forges Company will pay, July 1, a dividend at the rate of 20 per cent. per annum for 1873. The Sambre and Meuse Mines and Ironworks Company will pay, July 1, a dividend at the rate of 12s. per share for 1873.

rate of 12s. per share for 1873.

An adjudication for 17,500 tons of coal for the Administration of Public Assistance of the Seine has taken place this week at Paris. The contract for some descriptions went into the Pas-de-Calais. The tenders were not very numerous—three in all. The result of the adjudication was to indicate a reaction in prices less decided than in Belgrium. There is however, no more mention of a fall in prices. Belgium. There is, however, no more mention of a fall in prices, and firmness in quotations is the order of the day both at Lille and in the Pas-de-Calais; at the same time the least serious advance might also involve serious difficulties. The continual strikes in England are watched with some interest by French coalowners, who discuss among themselves their probable effect upon their own

BORING

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The anticipations expressed last week with respect to the Belgian coal trade have been fully realised, and a recent adjudication shows a decided reaction in affairs, prices being supported with firmness. a decided reaction in affairs, prices being supported with firmness. At Liége quotations have even been tending upwards. Both the Charleroi and Liége basins may be said to have returned, after some more or less sharp oscillations, to the prices of February, from which there is no disposition to recede. The fall in quotations has been definitely checked, and an advance will be possible if the demand increases. At the adjudication to which reference has just been made English (Newcastle) coal was offered inter alia. The Arsimont Colliery Company at Auvelais realised last year a net profit of 8687l. Of this amount, however, only 3333l. was applied to the payment of a dividend, at the rate of 8s. per share; the balance was voted to sundry redemptions and reserves. The Herve Wergifoss Company will pay on July 1 a dividend for 1873 at the rate of 3l. per shere. The shares of several Belgian colliery companies have been tending upwards. Thus Produits au Flénu have risen from 240l. to 280l.; Hornu and Wasmes, from 120l. to 144l.; and Levant du Flénu Hornu and Wasmes, from 120/. to 144/.; and Levant du Fléna

Goncessions of mineral bearings have just been granted by the Government of the Grand Duchy of Luxembourg to MM. Meta and Co., MM. Charles and Jules Collart, the Luxembourg Blast-Furnaces Company (Esch-sur-Alzette), the Rumelange Blast-Furnaces Company, and MM. Gonner, Munier, Helson, and Co. The rent to be paid is 5200%, per annum, and this rent is to be divided among the concessionaires in proportion to the extent of their concession. ncessionaires in proportion to the extent of their concession.

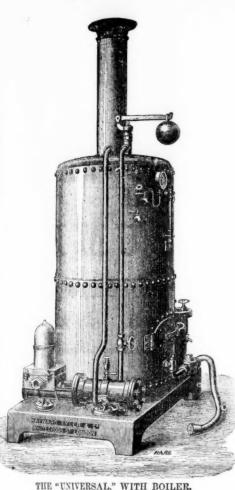
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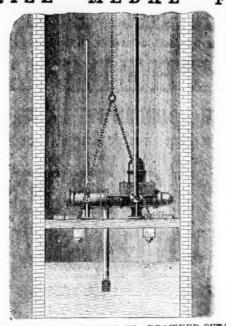


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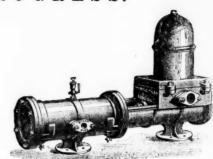
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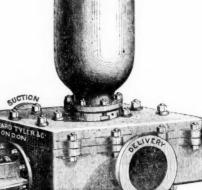


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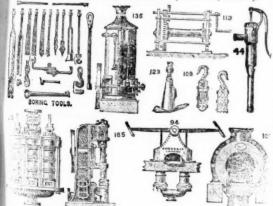
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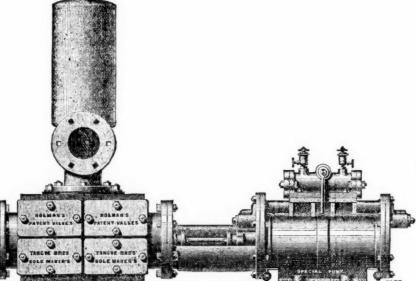
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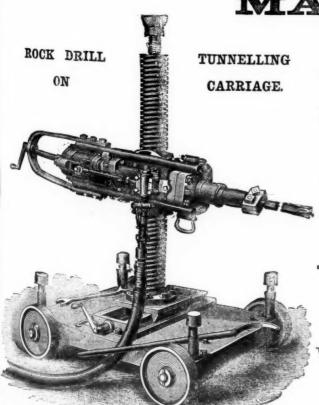
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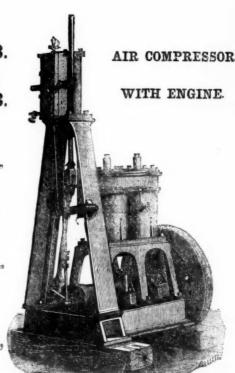
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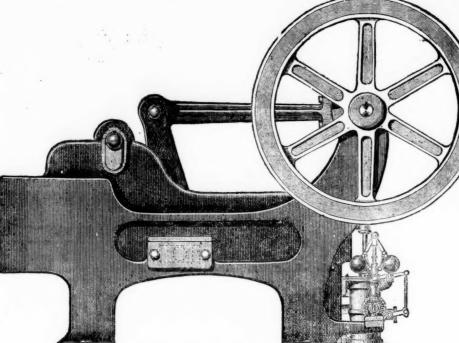
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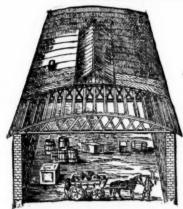
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